STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

Division of Oil and Gas Resources Management

WELL PERMIT

API WELL NUMBER

34-005-2-4160-00-00

OWNER NAME, ADDRESS

DEVON ENERGY PRODUCTION CO
20 NORTH BROADWAY
OKLAHOMA CITY OK 73102

DATE ISSUED	PERMIT EXPIRES
11/2/2011	11/1/2013

TELEPHONE NUMBER (405) 235-3611

IS HEREBY GRANTED PERMISSION TO: Drill New Well AND ABANDON WELL IF UNPRODUCTIVE

PURPOSE OF WELL: Stratigraphic

COMPLETION DATE IF PERMIT TO PLUG:

DESIGNATION AND LOCATION:

LEASE NAME	EICHELBERGER DAVID
WELL NUMBER	1P
COUNTY	ASHLAND
CIVIL TOWNSHIP	CLEAR CREEK
TRACT OR ALLOTMENT	
SURFACE FOOTAGE LOCATION	351'SL & 1543'EL OF SEC. 16
TARGET FOOTAGE LOCATION	

SURFACE NAD27

X: 2026664
Y: 466334
LAT: 40.946650791
LONG: -82.403477734

TARGET NAD27

TYPE OF TOOLS: Air Rotary/Fluid Rotary

PROPOSED TOTAL DEPTH	3950 FEET
GROUND LEVEL ELEVATION	1154 FEET

GEOLOGICAL FORMATION(S):

OHIO SHALE THRU BLACK RIVER

SPECIAL PERMIT CONDITIONS: Permit is subject to the attached terms and/or conditions
Samples Requested, see attached letter

CONDITIONALLY APPROVED CASING PROGRAM (SUBJECT TO APPROVAL OF THE OIL AND GAS WELL INSPECTOR):

CONDUCTOR MINIMUM OF 60' (IF AIR)
9 5/8 " APPROX. 600 ' WITH CEMENT CIRCULATED TO SURFACE
"BLOW OUT PREVENTOR REQUIRED" HAZARDOUS CONDITIONS MAY BE ENCOUNTERED
ALL DUE PRECAUTIONS SHOULD BE TAKEN

This permit is NOT TRANSFERABLE. This permit, or an exact copy thereof, must be displayed in a conspicuous and easily accessible place at the well site before permitted activity commences and remain until the well is completed. Ample notification to inspector is necessary.

OIL AND GAS WELL INSPECTOR:

BENKO THOMAS	(419) 202-2611
WILL ZIEGLER - Supervisor	(740) 438-5381
DISTRICT #:	(740) 392-4499

FIRE AND EMERGENCY NUMBERS

FIRE:	( ) - 911
MEDICAL SERVICE	( ) - 911

INSPECTOR NOTIFICATION

The oil and gas inspector must be notified at least 24 hours prior to:

1. Commencement of site construction
2. Pit excavation and closure
3. Commencement of drilling, reopening, converting or plugback operations
4. Installation and cementing of all casing strings
5. BOP testing
6. Well stimulation
7. Plugging operations

The oil and gas inspector must be notified immediately upon:

1. Discovery of defective well construction
2. Detection of any natural gas or H2S gas during drilling in urban areas
3. Discovery of defective well construction during well stimulation
4. Determination that a well is a lost hole
5. Determination that a well is a dry hole

J. MICHAEL BIDDISON

ACTING CHIEF, Division of Oil and Gas Resources Management

DNR 5606 (Rev. 6/10)

STATE OF OHIO

DEPARTMENT OF NATURAL RESOURCES

Division of Oil and Gas Resources Management

WELL PERMIT

API WELL NUMBER

34-005-2-4160-00-00

ATTN MIKE ERROLI
DEVON ENERGY PRODUCTION CO LP
20 N BROADWAY RM 6.014
OKLAHOMA CITY, OK 73102

Ohio Department of Natural Resources
Division of Mineral Resources Management
2045 Morse Rd. Bldg. H-3 – Columbus OH 43229-6693

Pre-Construction Permit Conditions

Application Number	APatt020120	Permit Number	N/A	Inspection Date	9/29/11	Modification Date (if applicable)	

Company	Devon Energy Production Company LP	Lease Name/Well #	David Eichelberger #1P
County	Ashland	Township	Clear Creek
Section/Lot	SE1/4 Sec. 16	Urban Area (if applicable)	N/A
Inspected By	Thomas Benko		
Accompanied By	Deorge Durington (Devon)		

Directions to Location: From Savahna @SR250 &SR545; take SR545 South to CR 758 West toTwp. Rd. 1421 South 1/2 mile to location.

ITEM	LEASE ROAD, WELL SITE CONSTRUCTION	Comments:
1	Tree/Brush Removal/Disposition	No
2	Topsoil Removal/Stockpiles/Placement	Location Edges
3	Erosion/Sediment Control (Silt Fence, Berms)	Silt fence or Berms
4	Drainage Controls (Diversion Ditches, Culverts, Waterways, Crossings)	None
5	Signage	Rig Sign at Entrance
6	Apron/Culverts/Road Materials	16 inch culvert pipe with 60 foot entrace apron.
7	Pull Off Area	Apron / Approach
8	Parking	On site
9	GPS – Access Road	N40.94677 W82.40734
10	GPS – Well Stake	N40.94672 W82.40341
11	GPS – Tank Battery	Not Determined
12	GPS – Pit Location	Not Determined
13	Site Construction Plan	

ITEM	DRILLING CONSIDERATIONS	Comments:
14	Location Dimensions (Length, Width, Approximate Acreage)	300 feet by 300 feet
15	Multiple Wells	☐ Yes ☒ No
16	Rig Type	AES #27 Carrier Mounted Double
17	Is a blow-out preventer required?	☒ Yes ☐ No
	If No, explain:	
18	Equipment Placement/ Orientation (Rig/Frac Tanks/Etc.)	Rig Face west, Pits North and Frac Tanks East of Rig
19	Mine Voids	Yes ☒ No
20	Verify Water Wells Within 300'	None

21	Verify Structures Within 500'	None				
22	Verify Streams and Drainage	No Streams				
23	Flood Plain	☐	Yes	☒	No	
24	Stream Crossing	☐	Yes	☒	No	
	Corps of Engineers Notified	☐	Yes	☒	No	
25	Wetlands	☐	Yes	☒	No	
	EPA Notified	☐	Yes	☒	No	

ITEM	PITS	Comments:
26	Source of water for drilling	Water Well on location
27	Source of water for hydrofrac	Unknown at this time
28	Drilling Pits (Placement/Orientation)	Steel pits above ground
29	Pit Dimensions (Length, Width, Depth)	10 feet by 60 feet
30	Estimated Volume/Capacity	500 BBL
31	Number & Type of Liners	N/A
32	Thickness of Liner	N/A
33	Type of Material Under Liner	N/A
34	Pit Construction Plan	N/A
35	Fencing (Pits/Entire Location)	N/A

ITEM	RESTORATION	Comments:
36	Pit Closure – (Standard/Solidification/ Off-Site Disposal – state time frame)	Steel Pits; Haul off site, Closed loop system
37	Site-Specific Time Frame for Restoration	6 months
38	Erosion/Sediment Control	Down gradient of location
39	Drainage Control	Silt Fence

ITEM	PRODUCTION					Comments:
40	Is the Access Road Gate required?	☐	Yes	☐	No	
	If No, explain:	Not determined				

	WAIVERS					Comments:
41	Is the Company required to submit a waiver?	☐	Yes	☐	No	
	If yes, submit the following waiver requests:					

Is the Company required to submit revised drawings? ☐ Yes ☐ No

THE FOLLOWING ITEMS HAVE BEEN CHANGED FROM THE ORIGINAL APPLICATION:

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

Under the authority of, and in accordance with Section 1509.10 of the Ohio Revised Code, the Division of Geological Survey hereby requests a set of drill cuttings from the following well:

Operator Devon Energy Production Co Phone No. (405) 235-3611

Lease Name/Well # David Eichenelberger #1P Permit No. 2-4160-01

Located in 351'SL & 1543'El of Sec. 16

Of Clear creek Township Ashland County.

Drill cuttings are to be collected every 10 feet, or as specified otherwise, from the following intervals:

Sample every 10 feet from Top of Utica to VTD

The Survey requests that approximately 100 grams of cuttings per sample be sent for washed cuttings and 200 grams of cuttings per sample be sent for unwashed cuttings.

These cuttings are to be made available to the Survey and can be delivered in person or shipped to the Ohio Division of Geological Survey, 2045 Morse Road, Building C-1, Columbus, Ohio 43229-6693 or the Ohio Division of Geological Survey, 3307 South Old State Road, Delaware, Ohio 43015-9454. If you cannot deliver the cuttings, please notify Greg Schumacher at (740) 548-7348, Extension 125, Monday through Friday 8:00 AM-5:00 PM, as soon as possible after the drilling has been completed, so that arrangements can then be made to pick up the cuttings at the well site. Delivery of the cuttings or notification of availability is the responsibility of the operator of the well.

The well operator has the option to request that cuttings be held confidential for a period of one year from the date the well reached total depth. A request for confidentiality should be forwarded to Ohio Division of Geological Survey Chief Lawrence Wickstrom at Larry.Wickstrom@dnr.state.oh.us shortly before or at the same time the cuttings are forwarded to the Ohio Division of Geological Survey.

Cutting samples placed on confidential status will be placed in a secure location, separate from all other data and materials, for a period of one year from the TD date. Upon request, the firm donating the cuttings will be allowed access to the samples as necessary.

Larry Wickstrom, Chief
ODNR-The Division of Geological Survey

11/02/2011
Date

DAILY ROUTE SLIP Clear Creek

APPLICATION NO. aPATT020120 TYPE: Drill New Well

CONAME DEVON ENERGY PRODUCTIO API

WELL NAME /NO. EICHENBERGER DAVID 1P

COUNTY 5 ASHLAND

	INITIALS	DATE
DATE APPLICATION REC'D	PN	10/13/2011
PERMIT FEE AND CHECK NO.	$500.00	2021871
RUSH AMOUNT RUSH CHECK NO.	$0.00	0
APPLICATION ENTERED	PN	10/13/11
APPLICATIONS AND PLATS SENT FOR MINE APPROVAL		
COAL APPROVAL RECEIVED		
OIL/GAS AFFIDAVIT REC'D		
URBANIZED AREA NOTIFICATION SENT		
~~URBANIZED~~ Shale AREA NOTIFICATION SENT TO INSPECTOR/REC'D BACK	PN	10/13
URBAN MAP REVIEW		
SAMPLES: YES____/SPECIAL AREAS		
GEOLOGIST APPROVAL	TCS	10/28/11
DATA ENTRY /ISSUED	PN	11/2/2011
PERMIT: TAKEN____ MAILED ✓	PN	11/2/2011

FAX TO:

FINAL MAP CHECK SS 11/4/11

COMMENTS:

SAMPLE EVERY 10' FROM TOP OF UTICA TO VTD.

~~ISSUE AS 21-00~~

Proof Sheet

APPL NUMBER	aPATT020120	**URBANIZED AREA ?**	☐
OWNER NUMBER	8864	**NAME**	
OWNER NAME	DEVON ENERGY PRODUCTION CO		
EXISTING WELL	0		
API PERMIT NO		**DISPOSAL PLAN 1**	ND
APPL TYPE	NW	**DISPOSAL PLAN 2**	
TYPE OF WELL	OG	**DISPOSAL PLAN 3**	
VARIANCE REQUEST		**DISPOSAL PLAN 4**	
WELL NAME	EICHENBERGER DAVID	**DISPOSAL PLAN 5**	
WELL NUMBER	1P	**MP Check #**	0
PREV/PROPOSED TD	3950		
DRILL UNIT ACRES	381.4		
TYPE OF TOOL	RTAF	**PROPOSED FORMATIONS**	
WELL CLASS	STRAT	OHIO SHALE THRU BLACK RIVER	✓
FIRE PHONE	( ) - 911		
MEDICAL PHONE	( ) -911		
COUNTY CODE	5		
COUNTY NAME	ASHLAND		
COAL (Y=-1/N=0)	0		
CIVIL TOWNSHIP	CLEAR CREEK	**TARG CIVIL TWP**	
SURF QUAD	OLIVESBURG	**TARG QUAD**	
Nad 27 SURF ORIG X	2,026,664	**Nad 27 TARG ORIG X**	
Nad 27 SURF ORIG Y	466,334	**Nad 27 TARG ORIG Y**	
GROUND ELEVATION	1154	**TARG ELEV**	0
SURF SEC	16	**TARG SECTION**	
SURF LOT		**TARG LOT**	
SURF QTR TWP		**TARG QTR TWP**	
SURF ALLOT		**TARG ALLOT**	
SURF TRACT		**TARG TRACT**	
SURF FRACTION		**TARG FRACTION**	

Proof Sheet

SURFACE FOOTAGE

351' SL & 1543' EL OF SEC 16

TARGET FOOTAGE

CASING PROGRAM

04

09 9 5/8 600

20

27

SPECIAL CONDITIONS/COMMENTS

PER

SK

P# 22374

COMPLETION DT

MINES APPROVAL

AFFIDAVIT APPROV

FINAL ENTRY DATE

BE BASE: 466

- 1127

- 661

+ 1154

493

- 50

543

NO MINES

GIS MAP CHECK OK

GEOSURVEY DRIFT: 42'

APPLICATION FOR A PERMIT (Form 1) #2021871

$500.00

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT
2045 Morse Road, Building H-3
COLUMBUS, OHIO 43229-6693
(614) 265-6633

aPAHO20120

SEE INSTRUCTIONS ON PAGE 2 (BACK)

1. I, We (applicant) Devon Energy Production Company, L.P. 2. Owner #: 8864
(address) 20 North Broadway, Oklahoma City, OK 73102 Phone #: 405-552-8196
hereby apply this date 4-Oct , 20 11 for a permit to:

- ☐ Reissue (check appropriate blank)
- ☑ Drill New Well
- ☐ Drill Directionally
- ☐ Drill Horizontally
- ☐ Revised Location
- ☐ Plug Back
- ☐ Plug and Abandon
- ☐ Orphan Well Program
- ☐ Convert
- ☐ Deepen
- ☐ Reopen
- ☐ Temporary Inactive

3. TYPE OF WELL:
- ☑ Oil & Gas
- ☒ Stratigraphic Test
- ☐ Annular Disposal
- ☐ Gas Storage
- ☐ Saltwater Injection
- ☐ Other *(explain):*
- ☐ Solution Mining*
- ☐ Input/Injection
- ☐ Enhanced Recovery*
- ☐ Water Supply
- ☐ Observation
- ☐ Production/Extraction

*(* if checked, select appropriate box below)*

4. MAIL PERMIT TO:
Devon Energy Production Company, L.P.
20 North Broadway, Rm. 6.014
Oklahoma City, OK 73102
Attn: Mike Feroli

20. TYPE OF TOOLS:
- ☐ Cable
- ☐ Cable / Air Rotary
- ☐ Cable / Fluid Rotary
- ☐ Cable / Air / Fluid Rotary
- ☐ Air Rotary
- ☑ Air / Fluid Rotary
- ☐ Fluid Rotary
- ☐ Service Rig

5. COUNTY: Ashland
6. CIVIL TOWNSHIP: Clear Creek, T25N R17W
7. SECTION: 16 8. LOT:
9. FRACTION: 10. QTR TWP:
11. TRACT / ALLOT:
12. WELL #: 1P
13. LEASE NAME: David Eichelberger
14. PROPOSED TOTAL DEPTH: 3950'
15. PROPOSED GEOLOGICAL FORMATION: ~~Ohio Shale through Black River~~ OK JS
16. DRILLING UNIT IN ACRES (must be same as acres indicated on plat): 318.4

21. PROPOSED CASING PROGRAM:
9 5/8" 36#ft J55 Surface Casing @±600'

22. FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS: (closest to well site)
Fire: 911
Medical: 911

17. IF PERMITTED PREVIOUSLY:
API #:
OWNER:
WELL #:
LEASE NAME:
TOTAL DEPTH:
GEOLOGICAL FORMATION:

23. MEANS OF INGRESS & EGRESS:
Township Road: TR 1451
County Road: CR 758
Municipal Road:
State Highway: 545

18. IF SURFACE RIGHTS ARE OWNED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES
Division Name:
Division Phone:

24. IS THE WELL LOCATION OR PRODUCTION FACILITIES WITHIN AN URBANIZED AREA AS DEFINED BY 1509.01(Y) ?
☐ Yes ☑ No

19. LANDOWNER ROYALTY INTEREST:
Is There An Attached List? ☐ Yes ☑ No
Name: David E. Eichelberger, et ux - 160 acres, (Surface Location)
Address: 5683 Olivesburg Drive, Ashland, OH 44805
Name: David Crist - 17.43 acres, (Lateral)
Address: 1408 C.R. 758, Ashland, OH 44805
Name: David Crist - 17.43 acres, (Lateral)
Address: 1408 C.R. 758, Ashland, OH 44805

RECEIVED
OCT 13 2011

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I, the undersigned, further depose and state that I am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (9) ORC for this application have been duly provided by me. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required in Section 1509.13, ORC, have been given.

That I hereby agree to conform with all provisions of Chapter 1509., ORC, and Chapter 1501., OAC, and all orders and conditions issued by the Chief, Division of Mineral Resources Management.

Signature of Owner/Authorized Agent Mike Feroli

Name (Type or Print) Mike Feroli Title Regulatory Specialist

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this 4th day of October, 20 11

NANCY S. HUNZIKER NOTARY PUBLIC # 99018473 EXP. 11/14/11 STATE OF OKLAHOMA

Nancy S. Hunziker (Notary Public)

November 14, 2011 (Date Commission Expires)

DNR 5619 (Rev. 06/2010)

There is an Oversize Map or Maps for this Permit.

Images are available for viewing at

M:Drive/OIL&Gas/OverSizedImages

RESTORATION PLAN (Form 4)

Ohio Department of Natural Resources

Division of Mineral Resources Management, 2045 Morse Road, Bldg. H-3, Columbus OH 43229-6693

1. DATE OF APPLICATION: 4-Oct-11

2. OWNER NAME, ADDRESS, & TELEPHONE NO.:
Devon Energy Corporation, 20 North Broadway 11.029 Oklahoma City, OK 73102, 405-552-8196

3. API #:

4. WELL #: David Eichelberger 1P

5. LEASE NAME: Eichelberger 1P

6. PROPERTY OWNER: David E. Eichelberger

7. COUNTY: Ashland

8. CIVIL TOWNSHIP: Clear Creek, T25N R17W

9. SECTION: 16 10. LOT: N/A

11. CURRENT LAND USE:
- [x] Cropland
- [ ] Commercial
- [ ] Pasture
- [ ] Idle Land
- [ ] Wetlands
- [ ] Recreational
- [ ] Residential
- [ ] Industrial
- [ ] Unreclaimed strip mine
- [ ] Woodland: [ ] Broadleaf [ ] Needlelike

12. SLOPE GRADIENT & LENGTH DETERMINED FROM:
- [ ] Ground Measurement
- [ ] U.S. Geological Survey Topographical Maps
- [x] Other: (explain) Site Specific Info/LIDAR

13. TYPE OF FALL VEGETAL COVER:
- [ ] Little or no vegetal cover
- [ ] Short grasses
- [ ] Tall weeds or short brush (1 to 2 ft.)
- [ ] Brush or bushes (2 to 6 ft.)
- [x] Agricultural crops
- [ ] Trees with sparse low brush
- [ ] Trees with dense low brush

14. SOIL & RESOILING MATERIAL AT WELLSITE:
- [x] Stockpile and protect topsoil to be used when preparing seedbed
- [ ] Use of soil additives (e.g., lime, fertilizer)
- [ ] No resoiling planned
- [ ] Proposed alternative

15. DISPOSAL PLAN FOR TREES AND TREE STUMPS:
- [x] No trees disturbed
- [ ] Haul to landfill
- [ ] Cut into firewood
- [ ] Sell to lumber company
- [ ] Bury with landowner's approval
- [ ] Mulch small trees and branches, erosion control
- [ ] Use for wildlife habitat with landowner approval
- [ ] Proposed alternative

16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES:
- [ ] No existing drainage facilities for removal of surface and/ or subsurface water
- [x] Tile drainage system underlying land to be disturbed
- [ ] Drain pipe(s) underlying land to be disturbed
- [ ] Surface drainage facilities on land to be disturbed

17. TYPE OF WELL:
- [ ] Oil
- [x] Gas
- [ ] Other

18. STEEPEST SLOPE GRADIENT CROSSING SITE:
- [ ] 0 to 2%
- [x] 2.1 to 8%
- [ ] 8.1 to 10%
- [ ] 10.1 to 24%
- [ ] greater than 24%

19. LENGTH OF STEEPEST SLOPE CROSSING SITE:
- [x] 1 to 100 ft.
- [ ] 101 to 200 ft.
- [ ] 201 to 400 ft.
- [ ] greater than 400 ft.

20. RESTORATION OF DRILLING PITS: **
- [ ] Haul drilling fluids and fill pits
- [ ] Use steel circulating tanks
- [x] Proposed alternative Closed Loop

21. BACKFILLING AND GRADING AT SITE:
- [x] Construct diversions channeled to naturally established drainage systems
- [ ] Construct terraces across slopes
- [ ] Grade to approximate original contour
- [x] Grade to minimize erosion & control offsite runoff
- [ ] Proposed alternative

22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE:
- [x] Seeding plan
- [ ] Sod
- [ ] Agricultural crops
- [ ] Trees and/or Bushes
- [ ] Proposed alternative

23. ADDITIONAL HOLES:
- [x] Rat/Mouse, if used, will be plugged

24. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD:
- [ ] 100 ft. or less
- [ ] 101 to 500 ft.
- [x] 501 to 1500 ft.
- [ ] greater than 1500 ft.

25. CURRENT LAND USE OF PATH OF ACCESS ROAD:
- [x] Cropland
- [ ] Pasture
- [ ] Commercial
- [ ] Idle land
- [ ] Wetlands
- [ ] Recreational
- [ ] Industrial
- [ ] Residential
- [ ] Unreclaimed strip mine
- [ ] Woodland: [ ] Broadleaf [ ] Needlelike

****PITS MUST BE FILLED WITHIN TWO MONTHS AFTER COMMENCEMENT OF THE WELL AND WITHIN FOURTEEN DAYS AFTER COMMENCEMENT OF THE WELL IN AN URBANIZED AREA.**

REQUIRED BY SECTION 1509.06 (A)(10), OHIO REVISED CODE -- FAILURED TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN $100.00 NOR MORE THAN $2,000.00 OR CIVIL PENALTIES NOT LESS THAN $4,000.00.

26. SURFACING MATERIAL FOR ACCESS ROAD: ☑ Gravel ☐ Brick and/or tile waste ☐ Slag ☑ Crushed stone ☐ No surfacing material to be used ☐ Proposed alternative _____	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: ☐ 0 to 5% ☑ 6 to 10% ☐ greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: ☑ Landowner ☐ Contractor ☐ Existing access road ☑ Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: ☑ 0 to 100 ft. ☐ 101 to 200 ft. ☐ 201 to 400 ft. ☐ greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: ☑ Diversions ☑ Filter strips ☐ Drains ☑ Riprap ☐ Open top culverts ☐ Water breaks ☐ Outsloping of road ☑ Pipe culverts ☐ Proposed alternative _____	31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? ☑ Yes ☐ No

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division of Mineral Resources Management.

Signature of Owner/Authorized Agent Mike Feroli

Name (Typed or Printed) Mike Feroli Date 10/4/2011

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

RECEIVED

OCT 13 2011

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DEPARTMENT OF NATURAL RESOURCES

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API WELL NUMBER

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OKLAHOMA CITY OK 73102

DATE ISSUED	PERMIT EXPIRES
11/2/2011	11/1/2013

TELEPHONE NUMBER (405) 235-3611

IS HEREBY GRANTED PERMISSION TO: Plug back to horizontally drill AND ABANDON WELL IF UNPRODUCTIVE

PURPOSE OF WELL: Oil & Gas

COMPLETION DATE IF PERMIT TO PLUG:

DESIGNATION AND LOCATION:

LEASE NAME	EICHELBERGER DAVID
WELL NUMBER	1H
COUNTY	ASHLAND
CIVIL TOWNSHIP	CLEAR CREEK
TRACT OR ALLOTMENT	
SURFACE FOOTAGE LOCATION	351'SL & 1543'EL OF SEC. 16
TARGET FOOTAGE LOCATION	300'NL & 1536'EL OF SEC. 16

	SURFACE NAD27	TARGET NAD27
X:	2026664	2026613
Y:	466334	471001
LAT:	40.9466507677808	40.9594611115744
LONG:	-82.4034777335994	-82.4036436856631

TYPE OF TOOLS: Air Rotary/Fluid Rotary

PROPOSED TOTAL DEPTH	8085 FEET
GROUND LEVEL ELEVATION	1154 FEET

GEOLOGICAL FORMATION(S):

UTICA/POINT PLEASANT

SPECIAL PERMIT CONDITIONS: Permit is subject to the attached terms and/or conditions
Horizontal Drilling Well Permit Conditions
Samples Requested, see attached letter

CONDITIONALLY APPROVED CASING PROGRAM (SUBJECT TO APPROVAL OF THE OIL AND GAS WELL INSPECTOR):

CONDUCTOR MINIMUM OF 60' (IF AIR)
9 5/8 " APPROX. 600 ' WITH CEMENT CIRCULATED TO SURFACE
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OIL AND GAS WELL INSPECTOR:

BENKO THOMAS	(419) 202-2611
WILL ZIEGLER - Supervisor	(740) 438-5381
DISTRICT #:	(740) 392-4499

INSPECTOR NOTIFICATION

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MEDICAL SERVICE	( ) - 911

J. MICHAEL BIDDISON

ACTING CHIEF, Division of Oil and Gas Resources Management

STATE OF OHIO

DEPARTMENT OF NATURAL RESOURCES

Division of Oil and Gas Resources Management

WELL PERMIT

API WELL NUMBER

34-005-2-4160-01-00

ATTN MIKE FEROLI
DEVON ENERGY PRODUCTION CO LP
20 N BROADWAY/RM 6.014
OKLAHOMA CITY, OK 73102

The Ohio Department of Natural Resources
The Division of Oil and Gas Resources Management
2045 Morse Road, Building H-3
Columbus, Ohio 43229-6693

HORIZONTAL DRILLING PERMIT CONDITIONS

Within thirty (30) days of completion of drilling operations, the following items **must** be submitted to the Division of Oil and Gas Resources Management:

- A copy of the bore hole deviation survey
- A revised surveyor's plat showing:
    1. Surface Location;
    2. Actual entry into the target formation;
    3. Actual ending point of the bore hole in the target formation;
    4. X, Y coordinates of the above three points.
- A fifty-dollar ($ 50.00) fee for the revised surveyor's plat.

DEPARTMENT OF NATURAL RESOURCES

Under the authority of, and in accordance with Section 1509.10 of the Ohio Revised Code, the Division of Geological Survey hereby requests a set of drill cuttings from the following well:

Operator Devon Energy Production Phone No. (405) 235-3611

Lease Name/Well # David Eichelberger #1H Permit No. 2-4160-01

Located in Surface: 351'SL & 1543'El of Sec. 16/Target: 300'NL & 1530'El of Sec. 16

Of Clear creek Township Ashland County.

Drill cuttings are to be collected every 10 feet, or as specified otherwise, from the following intervals:

Sample every 30 feet from Kick-Off Point to End of Lateral

The Survey requests that approximately 100 grams of cuttings per sample be sent for washed cuttings and 200 grams of cuttings per sample be sent for unwashed cuttings.

These cuttings are to be made available to the Survey and can be delivered in person or shipped to the Ohio Division of Geological Survey, 2045 Morse Road, Building C-1, Columbus, Ohio 43229-6693 or the Ohio Division of Geological Survey, 3307 South Old State Road, Delaware, Ohio 43015-9454. If you cannot deliver the cuttings, please notify Greg Schumacher at (740) 548-7348, Extension 125, Monday through Friday 8:00 AM-5:00 PM, as soon as possible after the drilling has been completed, so that arrangements can then be made to pick up the cuttings at the well site. Delivery of the cuttings or notification of availability is the responsibility of the operator of the well.

The well operator has the option to request that cuttings be held confidential for a period of one year from the date the well reached total depth. A request for confidentiality should be forwarded to Ohio Division of Geological Survey Chief Lawrence Wickstrom at Larry.Wickstrom@dnr.state.oh.us shortly before or at the same time the cuttings are forwarded to the Ohio Division of Geological Survey.

Cutting samples placed on confidential status will be placed in a secure location, separate from all other data and materials, for a period of one year from the TD date. Upon request, the firm donating the cuttings will be allowed access to the samples as necessary.

Larry Wickstrom, Chief
ODNR-The Division of Geological Survey
11/02/2011
Date

DAILY ROUTE SLIP Clear Creek

APPLICATION NO. aPATT020119 **TYPE:** Drill New Well, horizontal

CONAME DEVON ENERGY PRODUCTIO **API**

WELL NAME /NO. EICHENBER DAVID ~~11~~ 1 1H

COUNTY 5 ASHLAND	**INITIALS**	**DATE**
DATE APPLICATION REC'D	PN	10/13/2011
PERMIT FEE AND CHECK NO.	$500.00	2021871
RUSH AMOUNT RUSH CHECK NO.	$0.00	0
APPLICATION ENTERED	PN	10/13/11
APPLICATIONS AND PLATS SENT FOR MINE APPROVAL		
COAL APPROVAL RECEIVED		
OIL/GAS AFFIDAVIT REC'D		
URBANIZED AREA NOTIFICATION SENT		
~~URBANIZED~~ Shale AREA NOTIFICATION SENT TO INSPECTOR/REC'D BACK	PN	10/13/11
URBAN MAP REVIEW		
SAMPLES: YES____/SPECIAL AREAS		
GEOLOGIST APPROVAL	JFS	11/1/2011
DATA ENTRY /ISSUED	PN	11/2/2011
PERMIT: TAKEN_____ MAILED ✓	PN	11/2/2011

FAX TO:

FINAL MAP CHECK JR 11/4/11

COMMENTS:

- MAIL HD PERMIT CONDITIONS
- SHALE EVERY 30FT FROM KICK OFF POINT TO END OF LATERAL. Issue as-01-00

Proof Sheet

APPL NUMBER	aPATT020119	**URBANIZED AREA ?**	☐
OWNER NUMBER	8864	**NAME**	
OWNER NAME	DEVON ENERGY PRODUCTION CO		
EXISTING WELL	0		
API PERMIT NO		**DISPOSAL PLAN 1**	ND
APPL TYPE	HX	**DISPOSAL PLAN 2**	
TYPE OF WELL	OG	**DISPOSAL PLAN 3**	
VARIANCE REQUEST		**DISPOSAL PLAN 4**	
WELL NAME	EICHENBER DAVID	**DISPOSAL PLAN 5**	
WELL NUMBER	~~#~~ 1 1-1	**MP Check #**	0
PREV/PROPOSED TD	8085		
DRILL UNIT ACRES	318.4		
TYPE OF TOOL	RTAF	**PROPOSED FORMATIONS**	
WELL CLASS	EDPW	UTICA/POINT PLEASANT	
FIRE PHONE	( ) - 911		
MEDICAL PHONE	( ) - 911		
COUNTY CODE	5		
COUNTY NAME	ASHLAND		
COAL (Y=-1/N=0)	0		
CIVIL TOWNSHIP	CLEAR CREEK	**TARG CIVIL TWP**	CLEAR CREEK
SURF QUAD	OLIVESBURG	**TARG QUAD**	OLIVESBURG
Nad 27 SURF ORIG X	2,026,664	**Nad 27 TARG ORIG X**	2,026,613
Nad 27 SURF ORIG Y	466,334	**Nad 27 TARG ORIG Y**	471,001
GROUND ELEVATION	1154	**TARG ELEV**	1123 ~~0~~
SURF SEC	16	**TARG SECTION**	16
SURF LOT		**TARG LOT**	
SURF QTR TWP		**TARG QTR TWP**	
SURF ALLOT		**TARG ALLOT**	
SURF TRACT		**TARG TRACT**	
SURF FRACTION		**TARG FRACTION**	

Proof Sheet

SURFACE FOOTAGE

351' SL & 1543' EL OF SECT 16

TARGET FOOTAGE

300' NL & 1536' EL OF SECT 16

CASING PROGRAM

04

07 9 5/8 600

19 5 1/2

26

27

SPECIAL CONDITIONS/COMMENTS

COMPLETION DT

MINES APPROVAL

AFFIDAVIT APPROV

FINAL ENTRY DATE

APPLICATION FOR A PERMIT (Form 1)

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT
2045 Morse Road, Building H-3
COLUMBUS, OHIO 43229-6693
(614) 265-6633

2021871
$ 500.00

API 34005 20119

SEE INSTRUCTIONS ON PAGE 2 (BACK)

1. I, We (applicant) Devon Energy Production Company, L.P. 2. Owner #: 8864
(address) 20 North Broadway, Oklahoma City, OK 73102 Phone #: 405-552-8196
hereby apply this date 4-Oct , 20 11 for a permit to:

- [x] Reissue (check appropriate blank)
- [x] Drill New Well
- [ ] Drill Directionally
- [x] Drill Horizontally
- [ ] Revised Location
- [x] Plug Back
- [ ] Plug and Abandon
- [ ] Orphan Well Program
- [ ] Convert
- [ ] Deepen
- [ ] Reopen
- [ ] Temporary Inactive

3. TYPE OF WELL:
- [x] Oil & Gas
- [ ] Stratigraphic Test
- [ ] Annular Disposal
- [ ] Gas Storage
- [ ] Saltwater Injection
- [ ] Other *(explain):*
- [ ] Solution Mining*
- [ ] Input/Injection
- [ ] Enhanced Recovery*
- [ ] Water Supply
- [ ] Observation
- [ ] Production/Extraction

*(* if checked, select appropriate box below)*

4. MAIL PERMIT TO:
Devon Energy Production Company, L.P.
20 North Broadway, Rm. 6.014
Oklahoma City, OK 73102
Attn: Mike Feroli

20. TYPE OF TOOLS:
- [ ] Cable
- [ ] Cable / Air Rotary
- [ ] Cable / Fluid Rotary
- [ ] Cable / Air / Fluid Rotary
- [ ] Air Rotary
- [x] Air / Fluid Rotary
- [ ] Fluid Rotary
- [ ] Service Rig

5. COUNTY: Ashland
6. CIVIL TOWNSHIP: Clear Creek, T25N R17W
7. SECTION: 16 8. LOT:
9. FRACTION: 10. QTR TWP:
11. TRACT / ALLOT:
12. WELL #: 1H
13. LEASE NAME: David Eichelberger
14. PROPOSED TOTAL DEPTH: TVD 3650' TMD 8085'

21. PROPOSED CASING PROGRAM:
5 1/2" 17#ft P110 @8085' TMD 3650' TVD

15. PROPOSED GEOLOGICAL FORMATION:
Utica/POINT PLEASANT

16. DRILLING UNIT IN ACRES (must be same as acres indicated on plat): 134.313 ~~318.4~~ AJ

22. FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS: (closest to well site)
Fire: 911
Medical: 911

17. **IF PERMITTED PREVIOUSLY:**
API #:
OWNER:
WELL #:
LEASE NAME:
TOTAL DEPTH:
GEOLOGICAL FORMATION:

23. MEANS OF INGRESS & EGRESS:
Township Road: TR 1451
County Road: CR 758
Municipal Road:
State Highway: 545

18. IF SURFACE RIGHTS ARE OWNED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES
Division Name:
Division Phone:

24. IS THE WELL LOCATION OR PRODUCTION FACILITIES WITHIN AN URBANIZED AREA AS DEFINED BY 1509.01(Y) ?
- [ ] Yes
- [x] No

RECEIVED
OCT 13 2011

19. LANDOWNER ROYALTY INTEREST:
Is There An Attached List? [x] Yes [ ] No
Name: David E. Eichelberger, et ux - 160 acres, (Surface Location)
Address: 5683 Olivesburg Drive, Ashland, OH 44805
Name: David Crist - 17.43 acres, (Lateral)
Address: 1408 C.R. 758, Ashland, OH 44805
Name: David Crist - 140.62 acres, (Bottom Hole)
Address: 1408 C.R. 758, Ashland, OH 44805

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I, the undersigned, further depose and state that I am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (9) ORC for this application have been duly provided by me. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required in Section 1509.13, ORC, have been given.

That I hereby agree to conform with all provisions of Chapter 1509., ORC, and Chapter 1501., OAC, and all orders and conditions issued by the Chief, Division of Mineral Resources Management.

Signature of Owner/Authorized Agent Mike Feroli

Name (Type or Print) Mike Feroli Title Regulatory Specialist

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this the 4th day of October, 20 11

NANCY S. HUNZIKER NOTARY PUBLIC # 99018473 EXP. 11/14/11 STATE OF OKLAHOMA

Nancy S. Hunziker (Notary Public)

November 14, 2011 (Date Commission Expires)

DNR 5619 (Rev. 06/2010)

There is an Oversize Map or Maps for this Permit.

Images are available for viewing at

M:Drive/OIL&Gas/OverSizedImages

RESTORATION PLAN (Form 4)

Ohio Department of Natural Resources

Division of Mineral Resources Management, 2045 Morse Road, Bldg. H-3, Columbus OH 43229-6693

1. DATE OF APPLICATION: 4-Oct-11

2. OWNER NAME, ADDRESS, & TELEPHONE NO.:
Devon Energy Corporation, 20 North Broadway 11.029 Oklahoma City, OK 73102, 405-552-8196

3. API #:

4. WELL #: David Eichelberger 1H

5. LEASE NAME: Eichelberger 1H

6. PROPERTY OWNER: David E. Eichelberger

7. COUNTY: Ashland

8. CIVIL TOWNSHIP: Clear Creek, T25N R17W

9. SECTION: 16 10. LOT: N/A

11. CURRENT LAND USE:
- [x] Cropland
- [ ] Pasture
- [ ] Wetlands
- [ ] Residential
- [ ] Unreclaimed strip mine
- [ ] Woodland: [ ] Broadleaf [ ] Needlelike
- [ ] Commercial
- [ ] Idle Land
- [ ] Recreational
- [ ] Industrial

12. SLOPE GRADIENT & LENGTH DETERMINED FROM:
- [ ] Ground Measurement
- [ ] U.S. Geological Survey Topographical Maps
- [x] Other: (explain) Site Specific Info/LIDAR

13. TYPE OF FALL VEGETAL COVER:
- [ ] Little or no vegetal cover
- [ ] Short grasses
- [ ] Tall weeds or short brush (1 to 2 ft.)
- [ ] Brush or bushes (2 to 6 ft.)
- [x] Agricultural crops
- [ ] Trees with sparse low brush
- [ ] Trees with dense low brush

14. SOIL & RESOILING MATERIAL AT WELLSITE:
- [x] Stockpile and protect topsoil to be used when preparing seedbed
- [ ] Use of soil additives (e.g., lime, fertilizer)
- [ ] No resoiling planned
- [ ] Proposed alternative

15. DISPOSAL PLAN FOR TREES AND TREE STUMPS:
- [x] No trees disturbed
- [ ] Cut into firewood
- [ ] Bury with landowner's approval
- [ ] Mulch small trees and branches, erosion control
- [ ] Use for wildlife habitat with landowner approval
- [ ] Proposed alternative
- [ ] Haul to landfill
- [ ] Sell to lumber company

16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES:
- [ ] No existing drainage facilities for removal of surface and/ or subsurface water
- [x] Tile drainage system underlying land to be disturbed
- [ ] Drain pipe(s) underlying land to be disturbed
- [ ] Surface drainage facilities on land to be disturbed

17. TYPE OF WELL:
[ ] Oil [x] Gas [ ] Other

18. STEEPEST SLOPE GRADIENT CROSSING SITE:
- [ ] 0 to 2%
- [ ] 8.1 to 10%
- [ ] 10.1 to 24%
- [x] 2.1 to 8%
- [ ] greater than 24%

19. LENGTH OF STEEPEST SLOPE CROSSING SITE:
- [x] 1 to 100 ft.
- [ ] 201 to 400 ft.
- [ ] 101 to 200 ft.
- [ ] greater than 400 ft.

20. RESTORATION OF DRILLING PITS: **
- [ ] Haul drilling fluids and fill pits
- [ ] Use steel circulating tanks
- [x] Proposed alternative Closed Loop

21. BACKFILLING AND GRADING AT SITE:
- [x] Construct diversions channeled to naturally established drainage systems
- [ ] Construct terraces across slopes
- [ ] Grade to approximate original contour
- [x] Grade to minimize erosion & control offsite runoff
- [ ] Proposed alternative

22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE:
- [x] Seeding plan
- [ ] Agricultural crops
- [ ] Proposed alternative
- [ ] Sod
- [ ] Trees and/or Bushes

23. ADDITIONAL HOLES:
- [x] Rat/Mouse, if used, will be plugged

24. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD:
- [ ] 100 ft. or less
- [x] 501 to 1500 ft.
- [ ] 101 to 500 ft.
- [ ] greater than 1500 ft.

25. CURRENT LAND USE OF PATH OF ACCESS ROAD:
- [x] Cropland
- [ ] Idle land
- [ ] Industrial
- [ ] Unreclaimed strip mine
- [ ] Woodland: [ ] Broadleaf [ ] Needlelike
- [ ] Pasture
- [ ] Wetlands
- [ ] Residential
- [ ] Commercial
- [ ] Recreational

**PITS MUST BE FILLED WITHIN TWO MONTHS AFTER COMMENCEMENT OF THE WELL AND WITHIN FOURTEEN DAYS AFTER COMMENCEMENT OF THE WELL IN AN URBANIZED AREA.

REQUIRED BY SECTION 1509.06 (A)(10), OHIO REVISED CODE – FAILURED TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN $100.00 NOR MORE THAN $2,000.00 OR CIVIL PENALTIES NOT LESS THAN $4,000.00.

26. SURFACING MATERIAL FOR ACCESS ROAD: ☑ Gravel ☐ Brick and/or tile waste ☐ Slag ☑ Crushed stone ☐ No surfacing material to be used ☐ Proposed alternative _____	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: ☐ 0 to 5% ☑ 6 to 10% ☐ greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: ☑ Landowner ☐ Contractor ☐ Existing access road ☑ Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: ☑ 0 to 100 ft. ☐ 101 to 200 ft. ☐ 201 to 400 ft. ☐ greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: ☑ Diversions ☑ Filter strips ☐ Drains ☑ Riprap ☐ Open top culverts ☐ Water breaks ☐ Outsloping of road ☑ Pipe culverts ☐ Proposed alternative _____	31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? ☑ Yes ☐ No

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division of Mineral Resources Management.

Signature of Owner/Authorized Agent Mike Feroli

Name (Typed or Printed) Mike Feroli Date 10/4/2011

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

RECEIVED

OCT 13 2011

34-005-2-4160-01-00

March 8, 2012

Devon Energy Corporation

David Eichelberger #1H, Ashland County, Ohio

Completion Program

Objective

Complete the horizontal David Eichelberger # 1H in the Utica/Point Pleasant interval with a 13 Stage fracture stimulation program.

General Wellwork Procedure

1. Drill out DV Tool in 5-1/2" production casing, pressure test casing.
2. Perforate the "toe" section of the wellbore and execute a D-FIT (Diagnostic Formation Injection Test ~ 25 Bbls water). Shut well in.
3. Leave well shut-in for ~ 2-3 weeks
4. Prepare location for fracture stimulation
    a. Move in frac tanks to store supply water
    b. Install water transfer line from Village of Savannah waste water plant and transfer pumps
5. Execute 13 Stage fracture stimulation program
6. Clean out wellbore after all fracture stimulation stages are pumped
7. Rig up well test equipment and turn well to test (well test)

Particulars Related to Fracture Stimulation – Water Handling

1. Supply water will be from the Village of Savannah Waste Water Plant (aka "Lagoon")
2. The supply water will be filtered w/50 micron filters and then will run thru an Ultra Violet system to further reduce bacteria levels prior to transferring water to Eichelberger #1H location.
3. The supply water will then be transferred to the Eichelberger #1H location via polyethylene pipe
    a. Estimated time to install the transfer line is 1 week
    b. The transfer line will remain in place during completion (fracture stimulation) operations, pending successful completion operations ~ 10 days

4. Approximately 30 Frac Tanks @ ~ 500 bbls capacity per tank will be spotted next to the Eichelberger well location as a "temporary water holding location"
    a. Prior to spotting the frac tanks a plastic sheet will be installed over the area the tanks will occupy. The plastic will be "rolled up" on the ends using railroad ties with the plastic wrapped around the ties to create a "plastic sheet berm" around the frac tanks
    b. A vacuum pump will be installed @ this site with suction hose to drain any water inside the "plastic sheet berm". This water will be pumped to a holding tank and hauled off for disposal to an approved disposal site
5. Approximately 5 frac tanks @ ~ 500 bbls capacity per tank will be spotted @ the Eichelberger well site
    a. Prior to spotting the frac tanks a plastic sheet will be installed over the area the tanks will occupy. The plastic will be "rolled up" on the ends using railroad ties with the plastic wrapped around the ties to create a "plastic sheet berm" around the frac tanks
    b. A vacuum pump will be available to pump out any water inside the "plastic sheet berm". This water will be pumped to a holding tank and hauled off for disposal to an approved disposal site
    c. During fracture stimulation operations the water supply will be transferred from the Village of Savannah lagoons to the "temporary holding frac tanks" next to the Eichelberger location and then to the "active frac tanks" located @ the Eichelberger well site location
    d. The approximate distance from the "holding" to "active" tanks will be 100 yards
6. During water transfer and fracture stimulation operations there will be personnel manning the water transfer operations and frac tanks 24 hrs (personnel @ the "Lagoon", @ the "holding" tank location and also @ the "active/well site" tank locations to monitor for spills/leaks of any water from the Savannah water site/"lagoon"
7. Once fracture stimulation operations have been completed the "holding frac tanks" site will be dismantled. Approximately 5-10 of those frac tanks will be moved to/spotted next to the "active frac tanks" next to the Eichelberger well
    a. Prior to spotting the frac tanks a plastic sheet will be installed over the area the tanks will occupy. The plastic will be "rolled up" on the ends using railroad ties with the plastic wrapped around the ties to create a "plastic sheet berm" around the frac tanks
    b. Also, the polyethylene transfer line from the Village of Savannah to the "holding tanks" will be removed. Prior to removal the line will be flushed w/fresh water.
8. The "active tanks" @ the Eichelberger #1H well site location will serve as temporary flowback tanks and will capture flowback and produced water from the well during "well test operations". These tanks serve as temporary holding site and the water captured will be hauled from the tanks to an approved disposal site during well test operations – an ongoing haul and dispose process. Well Test operations will be manned 24 hrs.
9. Estimated water volumes as per current fracture stimulation design:
    a. ~ 5,400 bbls/stage
    b. 13 Stages currently planned

c. ~ total water volume associated with fracture stimulation = 13 Stages * 5,400 bbls/stage = 70,200 bbls
d. ~ another 4,000 bbls of water associated w/other well operations during the Completion Program

10. ~ total water volume estimated to be used in the Completion Program = 70,200 bbls + 4,000 bbls = 74,200 bbls
11. All chemicals used in the fracturing fluid will be added @ Eichelberger #1H well site location and "on the fly" during the frac job.

Should you have any questions please contact James Samaripa w/Devon Energy Corporation, Houston, Texas @ 713-265-6737.

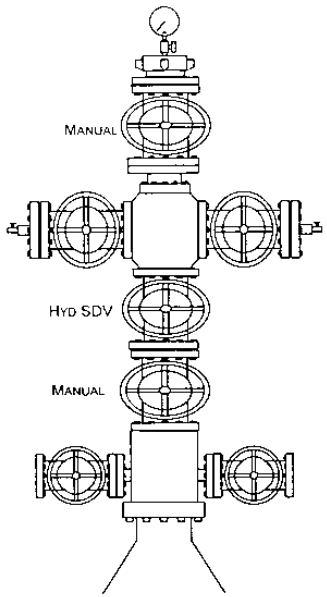
CURRENT: 2-28-12
PREPARED BY: K.MAY

SPUD DATE: 1-11-12
ELEVATION: 1,154'
KB: 1,168' (14')

Eichelberger 1H

Long Tail Field
Ashland, OH
PROPERTY # 037697-100
API#: 34-005-24160-01-00
SEC. 16-25N-17W

WI:
NRI:
SURFACE LAT: 40° 56' 48.14" N
SURFACE LONG: 82° 24' 12.11" W
BOTTOM LAT:
BOTTOM LONG:



15" COND (1-1-12)
84 # J-55
14' T - 90' B
(17-½" HOLE)

9-5/8" (1-14-12)
13 JTS 36# J-55 STC CSG
SET @ 638'
CMT'D W/ 165 SKS
CL "A", TAIL W/ 125 SKS
CL "A"
14' T - 638' B
(12-¼" HOLE)
TOC: SURFACE

5-½" 2.00' DV TOOL
SET @ 1,782'
CMT W/240 SKS TAIL W/ 210 SKS
(2-20-12)

TOC (5-½" SURFACE)

5 ½" CSG (2-20-12)
183 JTS 5-½" 17# P-110 BTC
SET @ 7998.4'
CMT W/ 310 SKS
TAIL W/1,270 SKS
(8-¾" HOLE 638" – 8,000')
(TOC: SURFACE)

SHORT JOINTS	MEASURED DEPTH	LENGTH	NO. OF JOINTS
#1	6,488.4'	21.77'	1
#2	4,512.7'	22.17'	1

2) KICK PLUG FROM PILOT SET
3,350'B – 2,690'T CMT W/ 275
SKS PLUGCEM
(1-31-12)

KOP: 2,974'

TVD: 3,618'

1) PILOT HOLE CMT PLUG
3,950'B – 3,350'T CMT W/ 241
SKS PLUGCEM
(1-31-12)

PILOT TD: 3,950'
API#: 34-005-24160

TMD: 8,000'
TVD: 3,618'
PBTD: 7,909.5'

FS: 7,998.4'
FC: 7,909.5'

Devon Energy Corporation

David Eichelberger #1H

Ashland County, Ohio

API # 34-005-24160-01-00

Completion Program

Objective

Complete the horizontal David Eichelberger # 1H in the Utica/Point Pleasant interval with a 13 stage hydraulic fracture stimulation program.

General Wellwork Procedure

1. Mill out DV Tool in 5-1/2" production casing, pressure test casing.
2. Perforate the "toe" section of the wellbore and execute a D-FIT (Diagnostic Formation Injection Test ~ 25 Bbls fresh water). Shut well in.
3. Leave well shut-in for ~ 2-3 weeks
4. Prepare for hydraulic fracture stimulation program
    a. Move in frac tanks to store supply water
    b. Install water transfer pumps, filters and Ultra Violet equipment @ the Village of Savannah's Lagoons site and install water transfer line from the Lagoons to the well site along secured ROW's
5. Execute 13 stage hydraulic fracture stimulation program
6. Clean out wellbore after all fracture stimulation stages are pumped
7. Rig up well test equipment and turn well to test (well test)

Particulars Related to the DV Tool, Hydraulic Fracture Stimulation Program, Water Supply and Water Handling

1. Mill out the DV Tool:
    a. Eichelberger #1H contains a DV Tool @ 1,782' Measured Depth (MD) in the 5-1/2" production casing string. Total Depth (TD) of the well is 8,000' MD and the production casing string was installed to a depth of 7,998' MD. Cement was circulated behind the production casing @ TD and displaced to the DV Tool @

1,782' MD. The DV Tool then allowed cement to be circulated behind the production casing string from 1,782' MD to surface.

b. In order to reach the drilled TD of the wellbore via the production casing the internals of the DV Tool must be milled out. The DV Tool body is still mechanically in-tact in the production casing string after this operation.
c. A Mill with an OD smaller than the ID of the DV Tool will be used to Mill out the DV Tool internals. Only fresh water will be used during this process. All fresh water fluids will be contained within the production casing string and in frac tanks on the surface during this process.
d. Once the DV Tool is milled out the entire production casing string will be pressure tested to confirm production casing integrity.
e. At no time during this process will the fresh water sand interval be exposed to any of the fluids used in the Milling of the DV Tool.

2. Hydraulic fracturing supply water will come from the Village of Savannah's Wastewater Treatment Facility Lagoons
    a. The water in the Lagoons is considered by the EPA as "treated waste water effluent" and the effluent is periodically discharged into the nearby Vermilion River.
    b. Lagoon dimensions are:
        i. The Lagoon cells have bottom dimensions of 255' L x 305' and indicated depth of Lagoon 1 and 2 from bottom of cell to top of dike is 9' and 10', respectively, as per attached drawings
        ii. Capacity of Lagoons @ 7' depth: Gallons per cell – 4,734,563 gals
        iii. Water level in the Lagoon 1 & 2 on March 30th was ~ 9' & 7', respectively
    c. See attached document and drawings of the Village of Savannah Lagoons and effluent discharge parameters
    d. Prior to transfer of Lagoon water Devon will test the water for the effluent discharge parameter guidelines

3. Hydraulic fracture stimulation program will use ~ 2,931,500 gals as per design
    a. Water volumes needed as per the hydraulic fracture stimulation design:
        i. 225,500 gals/stage
        ii. 13 stages planned
        iii. total water volume associated with fracture stimulation = 13 stages x 225,500 gals/stage = 2,913,500 gals

4. A centrifugal pump designed to pump @ 30 - 40 BPM rate will be installed @ the Lagoon site
    a. The pump's suction line will be installed in Lagoon #2. Floats will be attached to the suction line in order to keep the hose floating at or near the surface of the water level.
    b. The hose will be located toward the center of Lagoon #2, out away from the bank of the Lagoon.

c. The supply water will be withdrawn from Lagoon #2 and sent thru 50 micron filters and then pass thru an Ultra Violet system to further reduce bacteria levels prior to transferring water to Eichelberger #1H location.

5. The supply water will then be transferred to the Eichelberger #1H location via a 10" polyethylene pipe approximately 3.3 miles in length and that line will follow secured ROW.
    a. Estimated time to install the transfer line is 1 week.
    b. The line will be laid on the ground surface and will not block any streams/creeks nor disturb any wetlands by ditching or burying the line.
    c. The line will remain in place pending completion of hydraulic fracturing operations.
    d. The transfer pump will operate anywhere from 6 to12 hrs/day, dependent on the number of hydraulic fracture stimulations performed that particular day
    e. The Eichelberger #1H, the Lagoons and the transfer line are all located on the Lake Erie Watershed side. All water transferred from the Lagoons will remain on the Lake Erie Watershed side.

6. As per EPA guidelines:
    a. Should a breach/break occur in the transfer line during operations of transferring Lagoon water to location, to minimize any potential environmental impact Devon will stop water transfer operations immediately and repair the breach/break.
    b. Devon will contact the EPA Emergency Hotline @ 800-282-9378 and report any material that may reach any waterway.
    c. Devon will also contact the EPA District Office @ 419-373-3070 (EPA representative Walter Ariss)

7. Devon will record the water volume pumped from the Lagoon and report that volume accordingly on the ODNR site and submit an annual report.

8. 25 Frac Tanks @ ~ 500 bbls capacity per tank will be spotted at the Eichelberger #1H well location as a "temporary water holding location"
    a. Prior to spotting the frac tanks a 60 mil thickness plastic sheet will be installed over the area the tanks will occupy. The plastic will be "rolled up" around railroad ties @ the edges of the plastic sheets surrounding the frac tanks and thus used to create a "plastic sheet berm" surrounding the frac tanks
    b. A vacuum pump will be installed @ this site to drain any water collecting inside the "plastic sheet berm". This water will be pumped to a holding tank that will also capture flowback water and at a later date hauled off for disposal to an approved disposal site
    c. the water supply will continue to be transferred on an as needed basis from the Lagoon to the frac tanks at the temporary water holding location @ the Eichelberger #1H as water is pumped from those same frac tanks during hydraulic fracturing operations

d. Lagoon water transferred to the frac tanks will be controlled in a manner that the frac tanks will contain enough water to allow execution of the hydraulic fracturing operations. As those operations come close to the end the water transfer rate will be managed to minimize the amount of unused Lagoon water in the frac tanks
e. Once water transfer operations are completed the transfer line will be isolated from the frac tanks on location to insure no water in the frac tanks (Lagoon or Produced water) can be transferred back into/have access to the transfer line
f. The frac tanks containing unused Lagoon water will be used to capture flowback/produced water. The water in these frac tanks will then be hauled to an approved water disposal site.

9. During water transfer and fracture stimulation operations there will be personnel manning the water transfer operations and frac tanks 24 hrs - personnel will monitor transfer equipment @ the "Lagoon", ride the line ROW and monitor the frac tanks @ well site location. Repairs will be made as necessary to stop leaks or spills.

10. Once fracture stimulation operations have been completed frac tanks will remain on location and be used as temporary flowback tanks to capture flowback and produced water from the Eichelberger #1H during the Well Test phase. The water captured will be hauled from the tanks to an approved disposal site during well test operations – an ongoing "haul and dispose" operation. Well Test operations will be manned 24 hrs.

11. Frac tanks @ the well site not in operation will be removed from location.

12. Once fracture stimulation operations have been completed the polyethylene transfer line will be removed as soon as practical. Prior to removal the remaining Lagoon water in the Transfer line will be flushed w/fresh water back to the Lagoon, The fresh water will be acquired from a Lake Erie watershed side source. Once the line is displaced it will be dismantled and fresh water remaining in the line will be discharged into the local unnamed tributaries and further to the Vermilion River.

13. As per EPA requirements, Devon has filed a Notice Of Intent (NOI) requesting an NPDES general permit for a temporary discharge of the fresh water that will be in the transfer line prior to dismantling.

14. All chemicals used in the hydraulic fracturing stimulation program will be added "on the fly" @ Eichelberger #1H well site during the frac jobs.

Should you have any questions please contact James Samaripa w/Devon Energy Corporation, Houston, Texas @ 713-265-6737.

34-005-2-4160-01-00

Tugend, Thomas

From: Tugend, Thomas
Sent: Thursday, April 05, 2012 5:29 PM
To: 'Samaripa, James'
Cc: Benko, Thomas; Ziegler, William; 'Hall, Brian'; 'Walter.Ariss@epa.state.oh.us'
Subject: Ashland County Eichelberger #1H Completion Program Proposal
Attachments: James Samaripa.doc; Eichelberger #1H Compl Prog_4-04-2012.pdf; Savannah%20Lagoon%20Drawings.pdf

Mr. Samaripa, per the attached files, your request to use the treated effluent from the Village of Savannah wastewater treatment lagoons has been approved.
Please have your field staff coordinate closely with inspector Thomas Benko of our staff and OEPA representative Walter Ariss during the water transfer phase for the completion of the Eichelberger #1H well.

Thomas Tugend
Ohio Department of Natural Resources
Division of Oil and Gas Resources Management
2045 Morse Road, Bldg. F-2
Columbus Ohio, 43229
614-265-7058 (office)
614-653-1441 (cell)

Additional Permit Conditions
as per 4-5-12 MM

James Samaripa
Production Engineer
Devon Energy

Re: Ashland County, Clear Creek Township Permit 34-05-2-4160-01-00
David Eichelberger 1H
Completion Program

April 5, 2012

Via e-mail on this date, the Division of Oil and Gas Resources Management has approved your request (dated April 2, 2012, revised from original submittal dated March 30, 2012) to use treated effluent from the Village of Savannah Lagoon system in the completion program for the above referenced well.

The David Eichelberger 1H permit has been amended to include the "Completion Program" dated April 2, 2012 as well as the "Report on Detail Plans for Sanitary Sewers and Wastewater Treatment Facilities To Serve The Village of Savannah, Ashland County". Both the "Completion Program and "Report" have been included as attachments to the approval e-mail.

In addition to the above, the following items are also included as amended conditions to the Eichelberger 1H permit:

1. For projects involving construction or placement of fill in a stream or wetland, the applicant shall contact the appropriate district of the U.S. Army Corps of Engineers for a determination regarding potential impacts to water of the state as well as the requirements for obtaining, if necessary, certification. The applicant shall acquire a Section 404 permit and 401 water quality certification, if needed, before impacting any waters of the state as part of this project.
2. Approval of using the Village of Savanna's treated wastewater effluent from the Village's wastewater treatment lagoons does not relieve Devon Energy Corporation from compliance with all applicable laws and regulations.
3. A minimum of 2 feet of separation must be maintained from the floating suction line intake and the bottom of lagoon #2.
4. The Division of Oil and Gas Resources Management inspector, Thomas Benko (419-202-2611, cell) and Ohio EPA local representative, Walter Ariss (419-373-3070) must be notified a minimum of 24 hours prior to commencement of pipeline installation, testing and pipeline removal.
5. In the event of any release from the pipeline or from the well-site temporary storage, Division of Oil and Gas Inspector Thomas Benko (419-202-2611 (cell)) and supervisor William Ziegler (740-392-4409, office/740-438-5381 (cell)) and OEPA Walter Ariss (419-373-3070, office and 1-800-282-9378 OEPA emergency number) must be immediately notified.

Any changes to the Completion Program dated April 2, 2012 or the conditions as outlined above must first be approved by the Division of Oil and Gas Resources Management.

REPORT ON DETAIL PLANS FOR SANITARY SEWERS AND WASTEWATER TREATMENT FACILITIES TO SERVE THE VILLAGE OF SAVANNAH, ASHLAND COUNTY

On December 5, 1994, detail plans for wastewater treatment facilities to serve the Village of Savannah were received from Poggemeyer Design Group, 1168 North Main Street, Bowling Green, Ohio, 43402. Revised plans were received on July 6, 1995. The lagoon site is located on the west side of State Route 250, north of the Village of Savannah.

WASTEWATER TREATMENT

Wastewater will be transported to the treatment lagoons by 4,273 lineal feet of six-inch PVC force main. The wastewater treatment system consists of two controlled discharge lagoon cells designed to serve approximately 520 people. The cells are designed to provide a minimum of 180 days detention time and to meet criteria set forth in the *Recommended Standards for Wastewater Facilities*. Dikes are designed with an inside slope of 3:1 with rip rap to provide erosion protection.

The individual cells have a bottom dimension of 255' x 305'. The indicated depth of cells 1 and 2 is 7' and 8', respectively. The cells will be sealed with 3' of recompacted clay soil. The wastewater treatment facility will be enclosed with a 6' chain link fence topped with barbed wire. Monitoring wells will be provided around the lagoon perimeter.

The final effluent will flow by gravity to the Vermilion River. Discharge will occur when receiving stream flow provides a minimum dilution ratio of 5:1. Stream flow measurement is provided. Sludge that accumulates in the lagoons will be removed as required

and disposed according to an approved sludge management plan. Effluent quality is expected to meet the following:

	30 Day	7 Day
$CBOD_5$	25 mg/l	40 mg/l
Suspended Solids	65 mg/l	90 mg/l

SANITARY SEWERS

Gravity sanitary sewers will be installed throughout the village using a total of 12,403' of 8" PVC ASTM D-3034 pipe. Sanitary Sewer Data Sheets were included in the application package.

LIFT STATIONS

There will be three lift stations, two with submersible grinder pumps and one main submersible with 2 hydromatic S4P pumps, each capable of 200 GPM at 88' TDH. The main pump station will be located on the west side of South Main Street just south of McClain Street. Pump Station Data Sheets were also included in the application.

The detail plans appear to be acceptable and are recommended for approval. A copy of the detail plans is on file at the Northwest District Office.

Ralph Witte
Division of Surface Water

Paul G. Brock, P.E.
Group Leader, Permits
Division of Surface Water

/dlh
7/27/95

NINDO

VILLAGE OF SAVANNAH
WASTEWATER TREATMENT LAGOON
BASIS OF DESIGN

I. Objective

A. The objective of this report is to provide a brief, concise review of the design of the wastewater treatment lagoon in the Village of Savannah, Ohio.

II. Basis of Design

A. Population

1. Existing = 351
2. Year 2010 Projection = 520 (50% Growth)

B. Estimated Dry Weather Sewage Flows

1. Existing = 35,100 gpd *
2. Year 2010 Projection = 52,000 gpd

* The local school would contribute approximately 10% of this flow.

C. The proposed treatment facility will be designed to handle dry weather flows with normal sewage strength. The purpose of this design would allow the Village to initially build a municipal sewage treatment facility and separate sanitary sewer collection, as determined economically feasible.

D. Treatment plant effluent requirements:

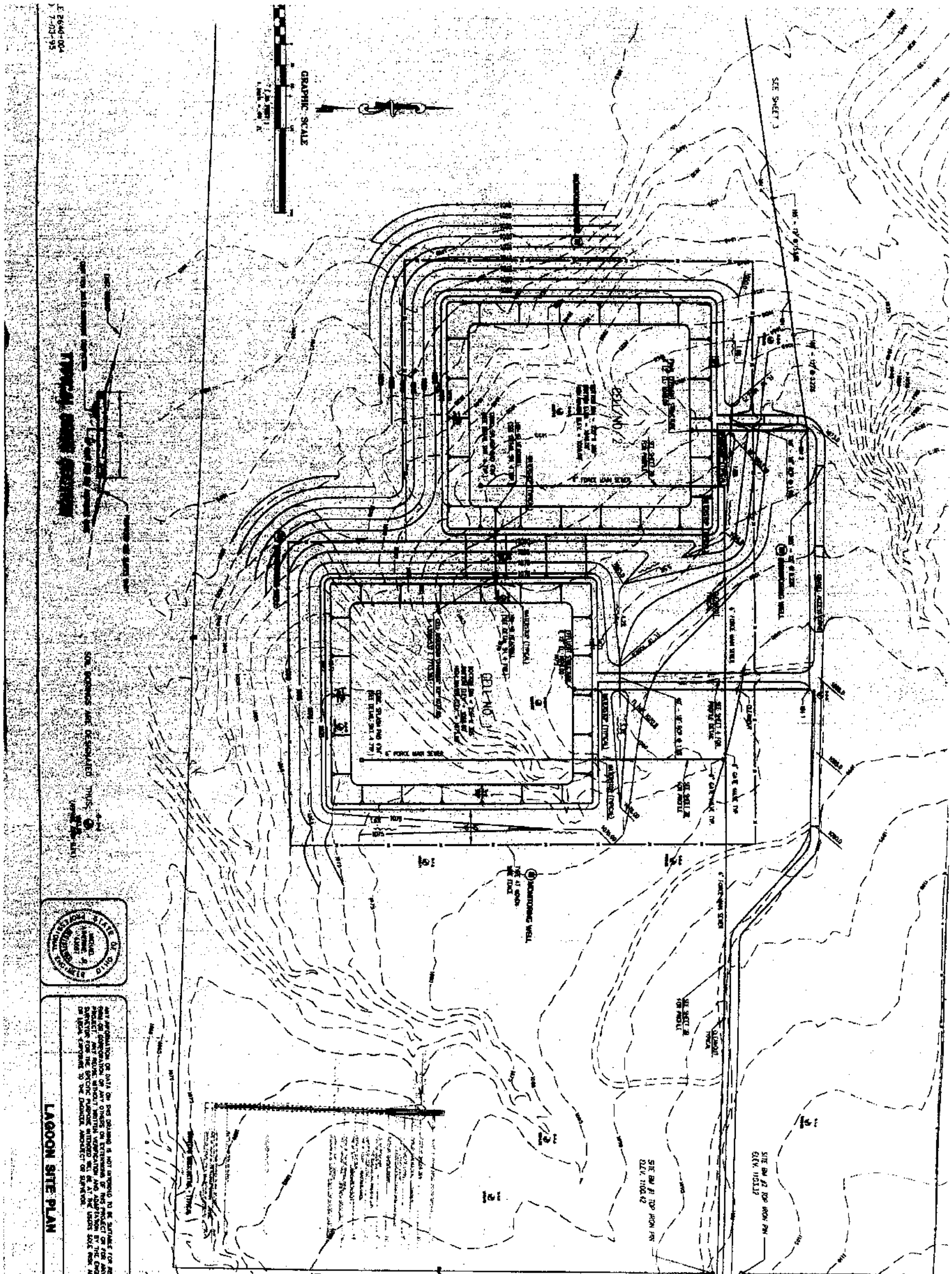
Parameter	Continuous Discharge	Controlled Discharge
BOD	10 mg/l	30 mg/l
Suspended Solids	12 mg/l	65 mg/l
Ammonia	2 mg/l	---

E. Controlled Discharge Lagoon

1. Sizing Determination (2 cells)

Design Flow gpd	52,000
Lagoon Gallons	9,360,000
Lagoon Cubic Feet	1,251,336
Cubic Feet per Cell	625,668
Cell Nos. 1 and 2	
Bottom Dimension	255' x 305'
High Water Dimension (7' Depth)	297' x 347'
Volume per Cell	632,919 c.f.

Gallons per Cell	4,734,563 gal.
Total Volume Both Cells	9,469,126 gal.



DRAWN BY	CHECKED BY	DATE
RAP	TES	7-03-95

REVISION

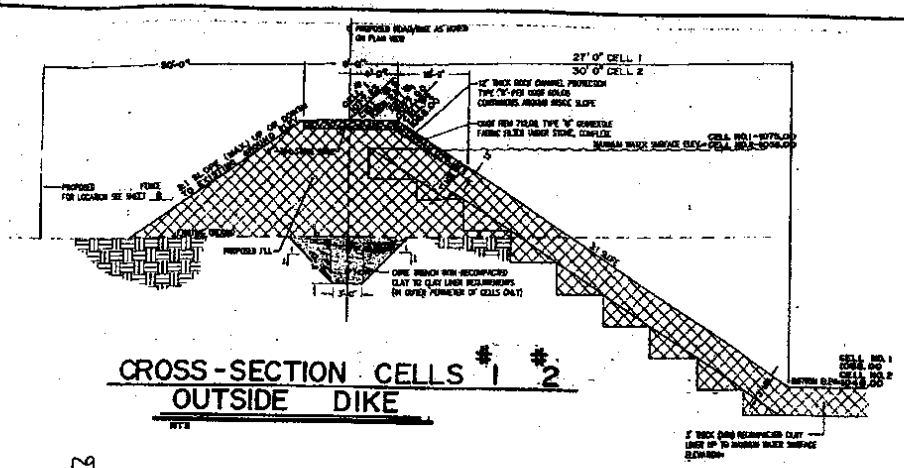
SANITARY SEWER IMPROVEMENTS
VILLAGE OF SAVANNAH
ASHLAND COUNTY, OHIO

POGGEMEYER DESIGN GROUP, INC.
ENGINEERS • ARCHITECTS • PLANNERS
1168 NORTH MAIN STREET BOWLING GREEN, OHIO 43402

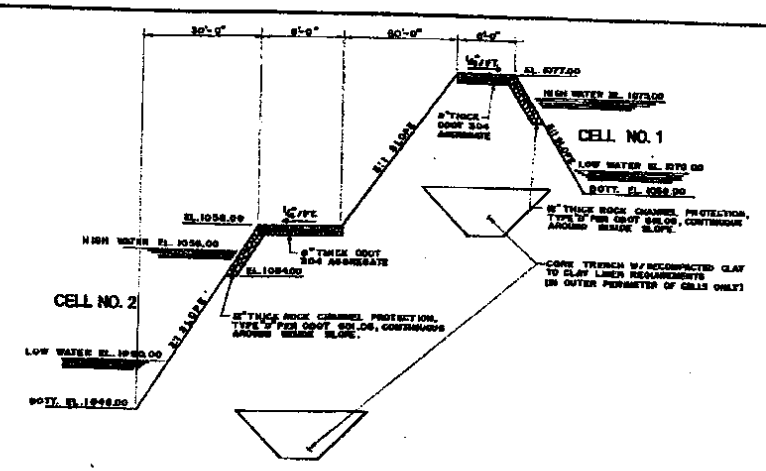
2 / 8
JOB NUMBER 2640-004

SANITARY SEWER IMPROVEMENTS
VILLAGE OF SAVANNAH
ASHLAND COUNTY, OHIO

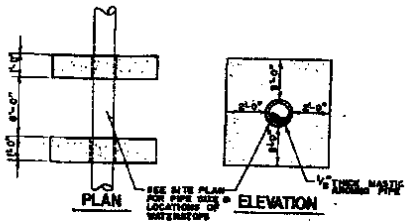
POGGEMEYER DESIGN GROUP, INC.



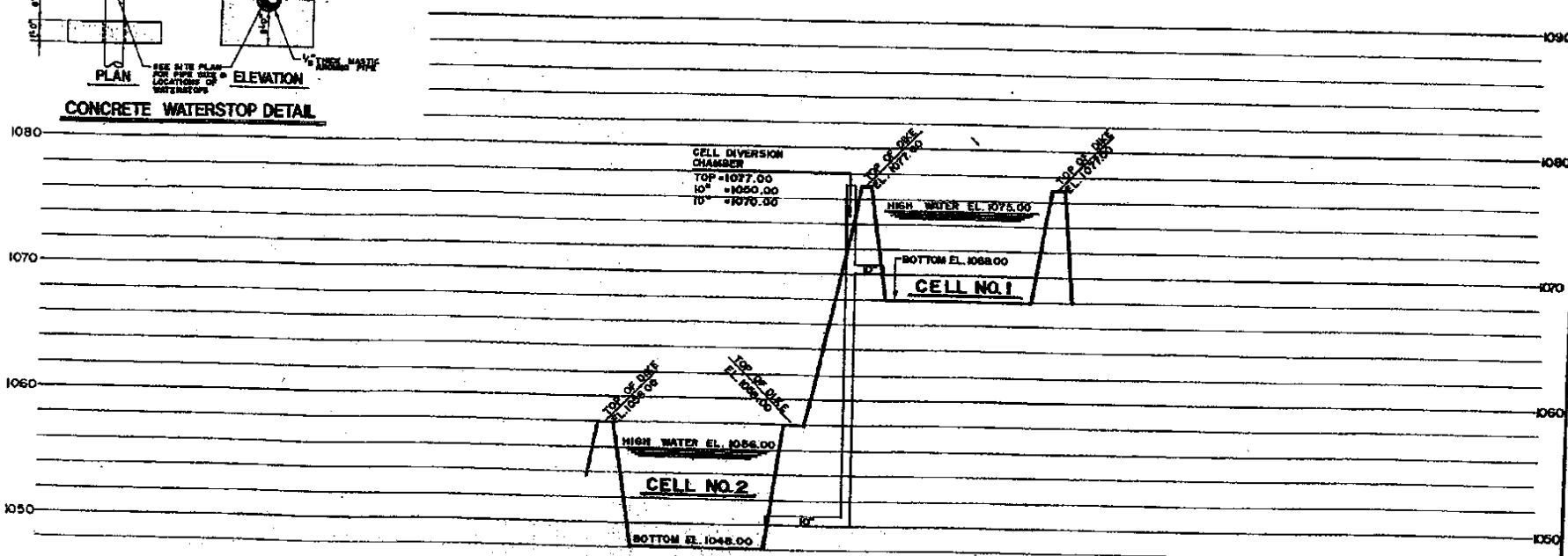
CROSS-SECTION CELLS #1 #2
OUTSIDE DIKE



CROSS - SECTION CELL 1&2 DIKE



CONCRETE WATERSTOP DETAIL



HYDRAULIC GRADE LINE

POGGEMEYER DESIGN GROUP, INC.
ARCHITECTS • ENGINEERS • PLANNERS

WASTEWATER LAGOONS
VILLAGE OF SAVANNAH
ASHLAND COUNTY, OHIO

5
8

HYDRAULIC GRADE LINE

Devon Energy Corporation

David Eichelberger #1H

Ashland County, Ohio

API # 34-005-24160-01-00

Completion Program

Objective

Complete the horizontal David Eichelberger # 1H in the Utica/Point Pleasant interval with a 13 stage hydraulic fracture stimulation program.

General Wellwork Procedure

1. Mill out DV Tool in 5-1/2" production casing, pressure test casing.
2. Perforate the "toe" section of the wellbore and execute a D-FIT (Diagnostic Formation Injection Test ~ 25 Bbls fresh water). Shut well in.
3. Leave well shut-in for ~ 2-3 weeks
4. Prepare for hydraulic fracture stimulation program
    a. Move in frac tanks to store supply water
    b. Install water transfer pumps, filters and Ultra Violet equipment @ the Village of Savannah's Lagoons site and install water transfer line from the Lagoons to the well site along secured ROW's
5. Execute 13 stage hydraulic fracture stimulation program
6. Clean out wellbore after all fracture stimulation stages are pumped
7. Rig up well test equipment and turn well to test (well test)

Particulars Related to the DV Tool, Hydraulic Fracture Stimulation Program, Water Supply and Water Handling

1. Mill out the DV Tool:
    a. Eichelberger #1H contains a DV Tool @ 1,782' Measured Depth (MD) in the 5-1/2" production casing string. Total Depth (TD) of the well is 8,000' MD and the production casing string was installed to a depth of 7,998' MD. Cement was circulated behind the production casing @ TD and displaced to the DV Tool @

1,782' MD. The DV Tool then allowed cement to be circulated behind the production casing string from 1,782' MD to surface.

b. In order to reach the drilled TD of the wellbore via the production casing the internals of the DV Tool must be milled out. The DV Tool body is still mechanically in-tact in the production casing string after this operation.
c. A Mill with an OD smaller than the ID of the DV Tool will be used to Mill out the DV Tool internals. Only fresh water will be used during this process. All fresh water fluids will be contained within the production casing string and in frac tanks on the surface during this process.
d. Once the DV Tool is milled out the entire production casing string will be pressure tested to confirm production casing integrity.
e. At no time during this process will the fresh water sand interval be exposed to any of the fluids used in the Milling of the DV Tool.

2. Hydraulic fracturing supply water will come from the Village of Savannah's Wastewater Treatment Facility Lagoons
    a. The water in the Lagoons is considered by the EPA as "treated waste water effluent" and the effluent is periodically discharged into the nearby Vermilion River.
    b. Lagoon dimensions are:
        i. The Lagoon cells have bottom dimensions of 255' L x 305' and indicated depth of Lagoon 1 and 2 from bottom of cell to top of dike is 9' and 10', respectively, as per attached drawings
        ii. Capacity of Lagoons @ 7' depth: Gallons per cell – 4,734,563 gals
        iii. Water level in the Lagoon 1 & 2 on March 30th was ~ 9' & 7', respectively
    c. See attached document and drawings of the Village of Savannah Lagoons and effluent discharge parameters
    d. Prior to transfer of Lagoon water Devon will test the water for the effluent discharge parameter guidelines

3. Hydraulic fracture stimulation program will use ~ 2,931,500 gals as per design
    a. Water volumes needed as per the hydraulic fracture stimulation design:
        i. 225,500 gals/stage
        ii. 13 stages planned
        iii. total water volume associated with fracture stimulation = 13 stages x 225,500 gals/stage = 2,913,500 gals

4. A centrifugal pump designed to pump @ 30 - 40 BPM rate will be installed @ the Lagoon site
    a. The pump's suction line will be installed in Lagoon #2. Floats will be attached to the suction line in order to keep the hose floating at or near the surface of the water level.
    b. The hose will be located toward the center of Lagoon #2, out away from the bank of the Lagoon.

c. The supply water will be withdrawn from Lagoon #2 and sent thru 50 micron filters and then pass thru an Ultra Violet system to further reduce bacteria levels prior to transferring water to Eichelberger #1H location.

5. The supply water will then be transferred to the Eichelberger #1H location via a 10" polyethylene pipe approximately 3.3 miles in length and that line will follow secured ROW.
    a. Estimated time to install the transfer line is 1 week.
    b. The line will be laid on the ground surface and will not block any streams/creeks nor disturb any wetlands by ditching or burying the line.
    c. Once the line is installed it will be hydro tested by filling the line with fresh water, a pressure chart recorder will be installed on one end of the line and the line will be tested to 150 psi for 30 minutes and the pressure test will be recorded. Fresh water in the line will be used in the Eichelberger completion.
    d. The line will remain in place pending completion of hydraulic fracturing operations.
    e. The transfer pump will operate anywhere from 6 to12 hrs/day, dependent on the number of hydraulic fracture stimulations performed that particular day
    f. The Eichelberger #1H, the Lagoons and the transfer line are all located on the Lake Erie Watershed side. All water transferred from the Lagoons will remain on the Lake Erie Watershed side.

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