



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

February 27, 2015

WELL WORK PERMIT
Secondary Recovery Well

This permit, API Well Number: 47-8704758, issued to HG ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: C. MCGRAW 115
Farm Name: ATKINSON, DELORES (TRUSTEE)
API Well Number: 47-8704758
Permit Type: Secondary Recovery Well
Date Issued: 02/27/2015

Promoting a healthy environment.

02/27/2015

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

87047585

FORM WW-3 (B)
1/12



1) Date: 01/16/2015
2) Operator's Well No. Charles McGraw 115
3) API Well No.: 47 - Roane -
State County Permit
4) UIC Permit No. UIC2R08704AP

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection / Gas Injection (not storage) / Waste Disposal
6) LOCATION: Elevation: 1111' Watershed: Rush Run
District: Smithfield County Roane Quadrangle Looneyville 7.5' 444
7) WELL OPERATOR: HG Energy, LLC 8) DESIGNATED AGENT Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name Ed Gainer Name To Be Determined Upon Approval of Permit
Address P. O. Box 821 Address
Spencer, WV 26201
11) PROPOSED WELL WORK Drill / Drill deeper / Redrill / Stimulate
Plug off old formation / Perforate new formation / Convert
Other physical change in well (specify)
12) GEOLOGIC TARGET FORMATION Big Injun Depth 2135 Feet (top) to 2155 Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 2235 TVD, 2740 TMD Feet
14) Approximate water strata depths: Fresh 400 Feet Salt 1635 Feet
15) Approximate coal seam depths: NA
16) Is coal being mined in the area? Yes No
17) Virgin reservoir pressure in target formation 1250 psig Source Estimated
18) Estimated reservoir fracture pressure 2650 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 BBL Bottom hole pressure 2400 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES Fresh water, produced
water, bactericides and other chemicals as needed to maintain water quality and improve oil recovery.
21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL -UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds
Fresh Water	7"	LS ST&C	17#			515'	515'	CTS	
Coal									Sizes
Intermediate									2.375" x 4.5"
Production	4 1/2"	J-55	10.5#			2700'	2700'	200 sks	Depths set
Tubing	2 3/8"	J-55	4.6#			2450'	2450'		2350'
Liners									Perforations
									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from C. H. McGraw, et ux
by deed / lease / other contract / dated 03/18/1910 of record in the
Roane County Clerk's office in lease Book 17 Page 570

[Handwritten signature]
1/20/15

Received
Office of Oil & Gas

JAN 22 2015

02/27/2015

7014 0510 0000 4074 5354

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CERTIFIED MAIL™ RECEIPT
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Postage	\$ 1.61
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.61



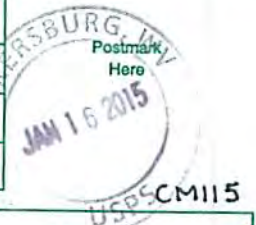
Sent To: Richard Fisher et al.
 Street, Apt. No.; or PO Box No.: 4513 clay Road ✓
 City, State, ZIP+4: Spencer, WV 25276
 PS Form 3800, August 2006 See Reverse for Instructions

7014 0510 0000 4074 5361

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Postage	\$ 1.40
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.40



Sent To: Reva Snodgrass ✓
 Street, Apt. No.; or PO Box No.: 3740 Tranquility Drive
 City, State, ZIP+4: Melbourne, FL 32934
 PS Form 3800, August 2006 See Reverse for Instructions

Received
 Office of Oil & Gas
 JAN 22 2015

WW-2B1
(5-12)

Well No. Charles McGraw 115

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name Sturm Environmental
Sampling Contractor Sturm Environmental

Well Operator HG Energy, LLC
Address 5260 Dupont Road
Parkersburg, WV 26101
Telephone 304-420-1119

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

- Surface Owners With Water Sources Identified for Sampling/Analysis:
- * Reva Snodgrass
3740 Tranquility Drive
Melbourne FL 32934
 - * Caroline Miller
4326 Clay Road
Spencer WV 25276
 - * Richard Fisher
4513 Clay Road
Spencer WV 25276
 - * Casie Roberts
4454 Clay Road
~~Met~~ Spencer WV 25276

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Office of Oil & Gas

02/27/2015

JAN 22 2015

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name HG Energy, LLC OP Code 494497948

Watershed Rush Run Quadrangle Looneyville 7.5'

Elevation 1111' County Roane District Smithfield

Description of anticipated Pit Waste: Fluids encountered while stimulating subject well

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a synthetic liner be used in the pit? Yes. If so, what mil.? 20 mil

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 25-561)
- ____ Reuse (at API Number _____)
- ____ Off Site Disposal (Supply form WW-9 for disposal location)
- ____ Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air, Fresh Water

-If oil based, what type? Synthetic, petroleum, etc. NA

Additives to be used? Water, Soap, KCl

Will closed loop system be used? No

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Leave in pit

-If left in pit and plan to solidify what medium will be used? Cement, lime, sawdust Native soil, cement, lime

-Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Diane White

Company Official (Typed Name) Diane White

Company Official Title Agent

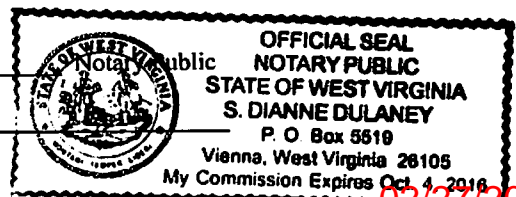
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Office of Oil & Gas

JAN 22 2015

Subscribed and sworn before me this 16th day of January, 20 15

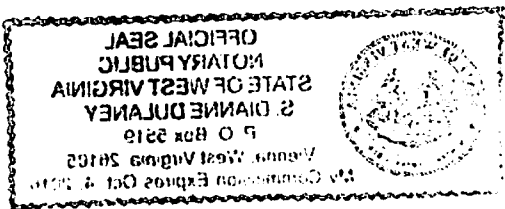
[Signature]

My commission expires Oct. 4, 2016



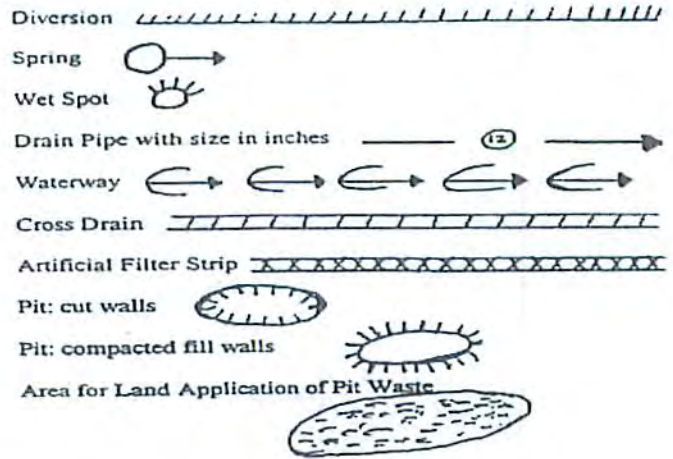
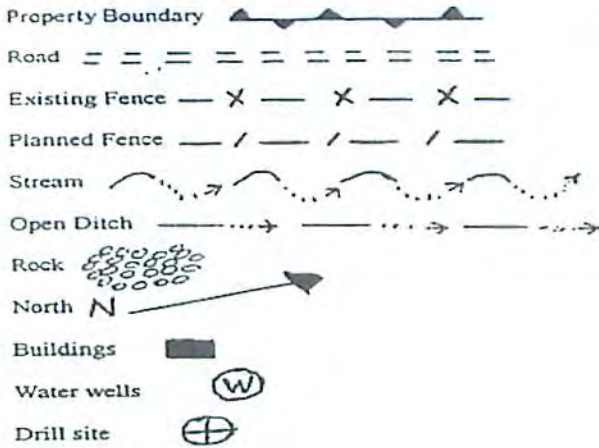
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Office of the
Notary Public



02/27/2015

LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1.8 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Straw 2 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre
Tall Fescue		40
Ladino Clover		5

Seed Type	Area II	lbs/acre
Tall Fescue		40
Ladino Clover		5

Proper sediment control should be in place at all times.

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Comments: _____

Title: Inspector

Date: 1/20/15

Field Reviewed?

Yes

No

Received
Office of Oil & Gas

JAN 22 2015

02/27/2015

SUBJECT WELL
Charles McGraw No.115



Section of
Looneyville 7.5' Quadrangle

SCALE 1"=1000
02/27/2015

◆ Denotes Potential Water Supply Source and Surface Owner (From Aerial Photography)

WELL TYPE: OIL GAS LIQUID INJECTION X WASTE DISPOSAL HORIZONTAL

(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1111' WATERSHED RUSH CREEK OF HENRYS FORK DISTRICT SMITHFIELD COUNTY ROANE STATE 47 COUNTY 087 PERMIT # 047585

SURFACE OWNER DOLORES ATKINSON (TRUSTEE), RICHARD & RONALD FISCHER ACREAGE 40.00 ACRES +/- OIL & GAS ROYALTY OWNER GEORGE W. CARR ET AL LEASE ACREAGE 75.00 ACRES +/- PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WELL WILL BE DRILLED DIRECTIONALLY (S 51.30' E 710')

TARGET FORMATION BIG INJUN CLEAN OUT & REFLUG

WELL OPERATOR H.G. ENERGY, LLC ADDRESS 5260 DUPONT ROAD PARKERSBURG, WV 26101

DESIGNATED AGENT DIANE WHITE ADDRESS 5260 DUPONT ROAD PARKERSBURG, WV 26101

ESTIMATED DEPTH TVD=2,235' MD=2,740'

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF OIL AND GAS

MOODY LAND SURVEYING, LLC

ST. MARYS, WV 26170

DATE 12/15/14 OPERATOR'S WELL C. MCGRAW # 115

JOSHUA E. MOODY, P.S. 2020

PROVEN SOURCE OF ELEV. MAPPING GRADE GPS

MINIMUM DEGREE OF ACCURACY 1/200

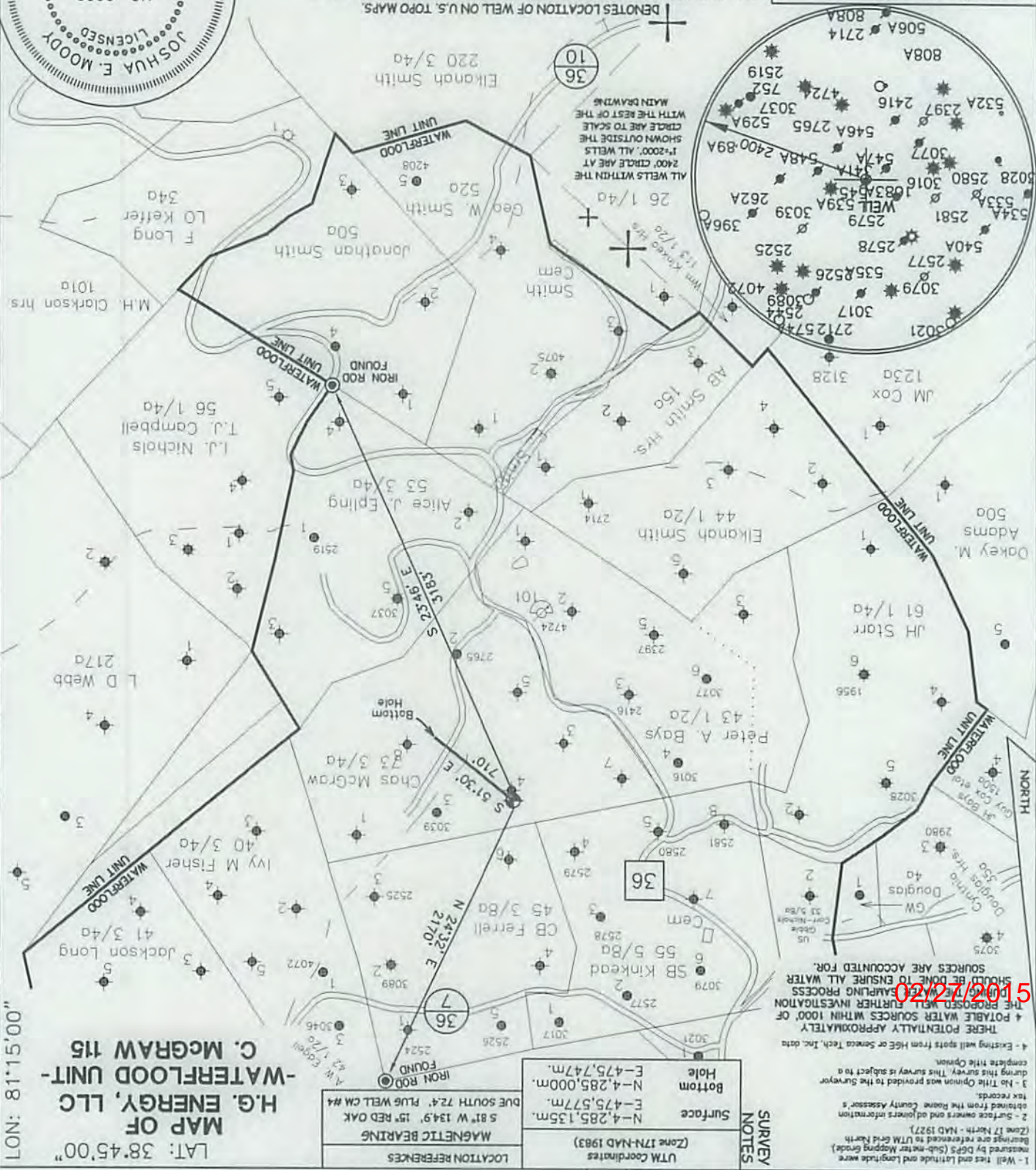
SCALE 1" = 1000'

DRAWING # 14CLOVER FOLDER

JOB # 14-033

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

REQUIRES BY LAW AND THE REGULATIONS ISSUED AND PERSCRIBED BY THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.



(BOT. HL: LON:-81°16'51.9" LAT:38°42'47.6")

