



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

August 12, 2014

WELL WORK PERMIT

Vertical Well

This permit, API Well Number: 47-3906369, issued to RESERVE OIL & GAS, INC., 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: TARGET #1
Farm Name: SOUTH CHARLESTON MUNICIPAL
API Well Number: 47-3906369
Permit Type: Vertical Well
Date Issued: 08/12/2014

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.

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

290

1) Well Operator: Reserve Oil & Gas, Inc. 310-324 Kanawha Spring Hill Corp. Charleston West
Operator ID County District Quadrangle

2) Operator's Well Number: Target #1 3) Elevation: 785

4) Well Type: (a) Oil _____ or Gas X
(b) If Gas: Production X / Underground Storage _____
Deep _____ / Shallow X

CK 9653
6500

5) Proposed Target Formation(s): Base of Lower Huron/Rhinestreet Proposed Target Depth: 4300
6) Proposed Total Depth: 4350 Feet Formation at Proposed Total Depth: Lower Huron/Rhinestreet
7) Approximate fresh water strata depths: 200
8) Approximate salt water depths: 1200

9) Approximate coal seam depths: None

10) Approximate void depths,(coal, Karst, other): No

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
Drill and complete a New Devonian Shale well with a 2 stage frac.

August 11th
5:23:14

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft			
Conductor	13 3/8			200		CTS
Fresh Water	9 5/8			270'	400'	CTS x 40% excess
Coal				gan		
Intermediate	7			1800'		RECEIVED Office of Oil and Gas CTS x 30% excess in hole
Production	4 1/2			4300'		JUL 120 sks
Tubing						
Liners						

WV Department of
Environmental Protection

Packers: Kind: _____
Sizes: _____
Depths Set _____

WW-2A
(Rev. 6-07)

1.) Date: _____
2.) Operator's Well Number _____ Target #1 _____
State _____ County _____ Permit _____
3.) API Well No.: 47- _____ - _____

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT**

4) Surface Owner(s) to be served:
(a) Name South Charleston Municipal Building Commission
Address P.O. Box 8597 ✓
South Charleston, WV 25303
(b) Name _____
Address _____
(c) Name _____
Address _____
6) Inspector Terry Urban
Address P.O. Box 1207
Clendenin, WV 25045
Telephone 304-549-5915

5) (a) Coal Operator
Name _____
Address _____
(b) Coal Owner(s) with Declaration
Name _____
Address _____
(c) Coal Lessee with Declaration
Name _____
Address _____

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas
OR

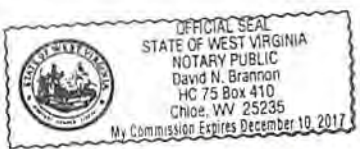
Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

- Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

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, 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 and imprisonment.



Well Operator Reserve Oil & Gas, Inc.
By: _____
Its: Vice President
Address 929 Charleston Road
Spencer, WV 25276
Telephone 304-927-5228

Subscribed and sworn before me this 19th day of May, 2014
David N. Brannon Notary Public
My Commission Expires December 10, 2017

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

RECEIVED
Office of Oil and Gas
JUL 28 2014

WW-2A Surface Waiver

SURFACE OWNER WAIVER

County Kanawha Operator Reserve Oil & Gas, Inc. Operator well number Target #1

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT. WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have FIFTEEN (15) DAYS after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure a adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

- The Chief has the power to deny or condition a well work permit based on comments on the following grounds:
1) The proposed well work will constitute a hazard to the safety of persons.
2) The soil erosion and sediment control plan is not adequate or effective;
3) Damage would occur to publicly owned lands or resources;
4) The proposed well work fails to protect fresh water sources or supplies;
5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

List of Water Testing Laboratories. The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through ___ including a work order on Form WW2-B, a survey plat, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

Signature Date
Print Name

FOR EXECUTION BY A CORPORATION, ETC.

Company Name City of South Charleston
By Frank A. Mullens Jr. Mayor
Signature Date JUL 28 2014

WV Department of Environmental Protection

3906369

WW-2A Coal Waiver

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Kanawha
Operator Reserve Oil & Gas, Inc.

Operator's Well Number Target #1

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator ____/ owner ____/ lessee ____/ of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Signature

Date

Company Name
By
Its

Date

Signature

Date

No known owner, operator, or lessee of workable coalbed/seam on this tract.

RECEIVED
Office of Oil and Gas
JUL 28 2014
WV Department of Environmental Protection

08/15/2014

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Danny Cochran	Reserve Oil & Gas, Inc.	1/8	LB 259/34

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:
By: Its:

Reserve Oil & Gas, Inc.
 J. Scott Freshwater
 Vice President



DEPARTMENT
Office of Oil and Gas
 JUL 28 2014
 WV Department of
Environmental Protection

08/15/2014

WW-2B1
(5-12)

Well No. Target #1

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 ALS Environmental Lab
Sampling Contractor _____

Well Operator Reserve Oil & Gas, Inc.
Address 929 Charleston Road
Spencer, WV 25276
Telephone 304-927-5228

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.

* See Attached

RECEIVED
Office of Oil and Gas

JUL 28 2014

WV Department of
Environmental Protection

08/15/2014



Reserve Oil and Gas, Inc.

Well Information / Potential Water Well Sample Data Sheet

Operator: Reserve Oil & Gas

Lease Name and Number: Target # 1

Comments

The initial mapping review of the area surrounding the proposed well site revealed the below listed surface owner (s) that were potentially utilizing groundwater (potable) for human consumption or other purposes within one thousand (1,000) feet of the proposed well site. The following landowners have been notified of the opportunity to request a water sample should it be necessary.

Please note that the following information is subject to change upon field inspection.

Individual Contacted or Notified

Owner / Occupant: TIF Realty

Address: Track Fork Shops

Letter / Notice Date: 5/20/14

Comments: - city water at shopping plaza - Target, etc.

Owner / Occupant: SE ice skating rink

Address:

Letter / Notice Date: 5/20/14

Comments: city water

Owner / Occupant: Mazella Quarry - Joe Mazella 304-744-3682

Address:

Letter / Notice Date: 5/20/14

Comments: has well - used to wash hands/cars, flush - wants sample

Owner / Occupant:

Address:

Letter / Notice Date:

Comments:

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Reserve Oil & Gas, Inc. OP Code 310-324

Watershed (HUC 10) Trace Fork of Davis Creek Quadrangle Charleston West

Elevation 785 County Kanawha District Spring Hill Corp.

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

Will a pit be used for drill cuttings? Yes x No _____

If so, please describe anticipated pit waste: gel water, drill cuttings, fresh water

Will a synthetic liner be used in the pit? Yes x No _____ If so, what ml.? 20

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? N/A

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air, gel, fresh water

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

Additives to be used in drilling medium? _____

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) soil/dirt

-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 [Signature]

Company Official (Typed Name) J. Scott Freshwater

Company Official Title Vice President

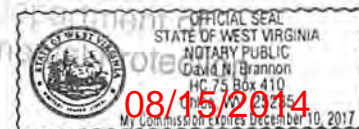
RECEIVED
Office of Oil and Gas

Subscribed and sworn before me this 19th day of May, 20 14

David N. Brannon Notary Public

My commission expires December 10, 2017

JUL 28 2014



Form WW-9

Operator's Well No. Target #1

Proposed Revegetation Treatment: Acres Disturbed 1.5 Prevegetation pH 5.5

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 0.25 lbs/acre (500 lbs minimum)

Mulch Hay 2 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
Orchard Grass		25	Ladino Clover		5
Red Top Clover		15	KY 31		40

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Title: Inspector Ch. Cas Date: 5-23-14

Field Reviewed? Yes No

RECEIVED
Office of Oil and Gas
JUL 28 2014
WV Department of
Environmental Protection
08/15/2014

TARGET #1

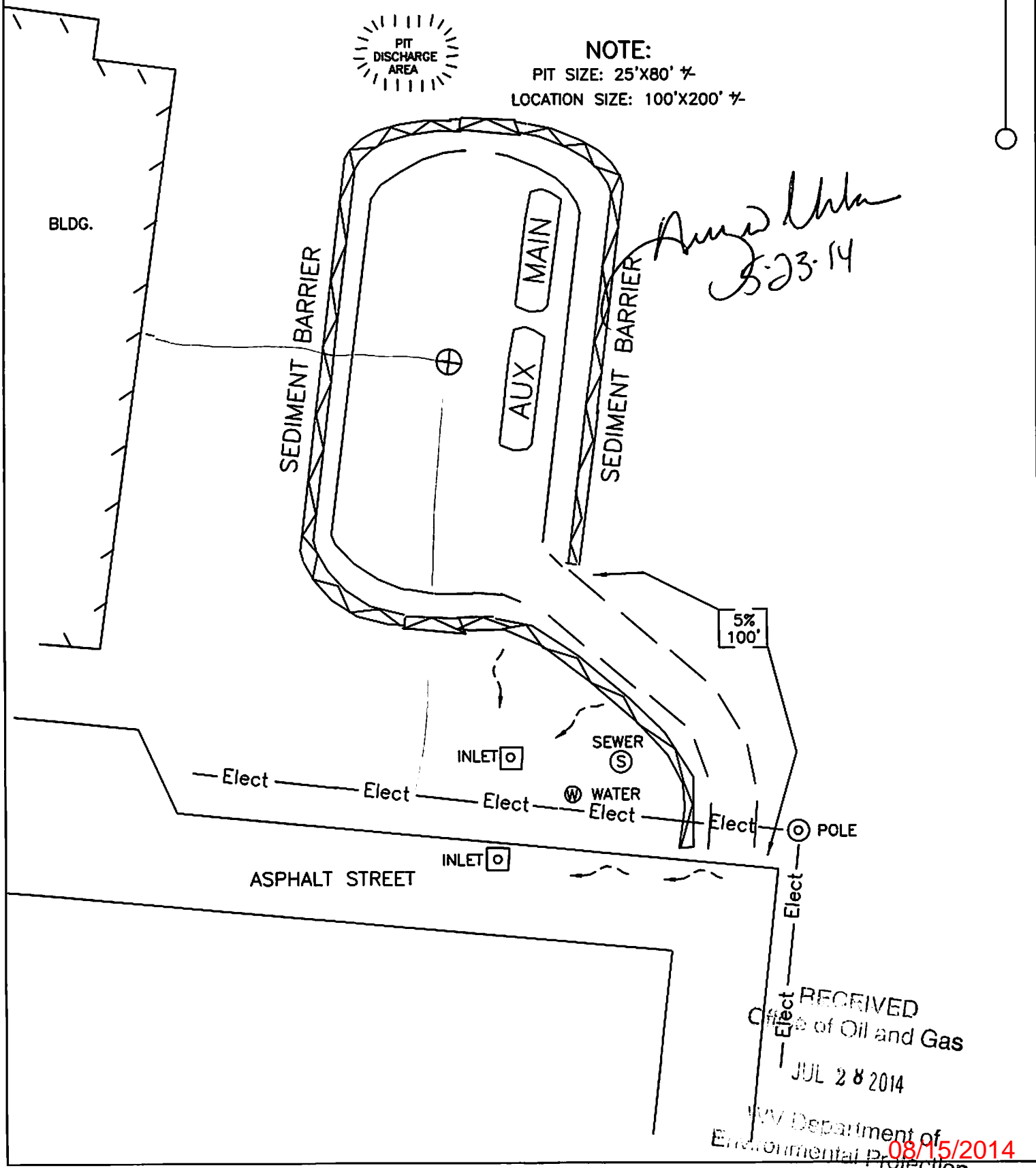
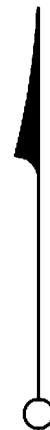
NOTE:

Any Trees 6" or larger in Diameter will be cut and piled. Brush will be used as Sediment Barriers. Tempory seed and mulch all slopes upon construction. Stone over all Culverts and entrance off existing roadway.

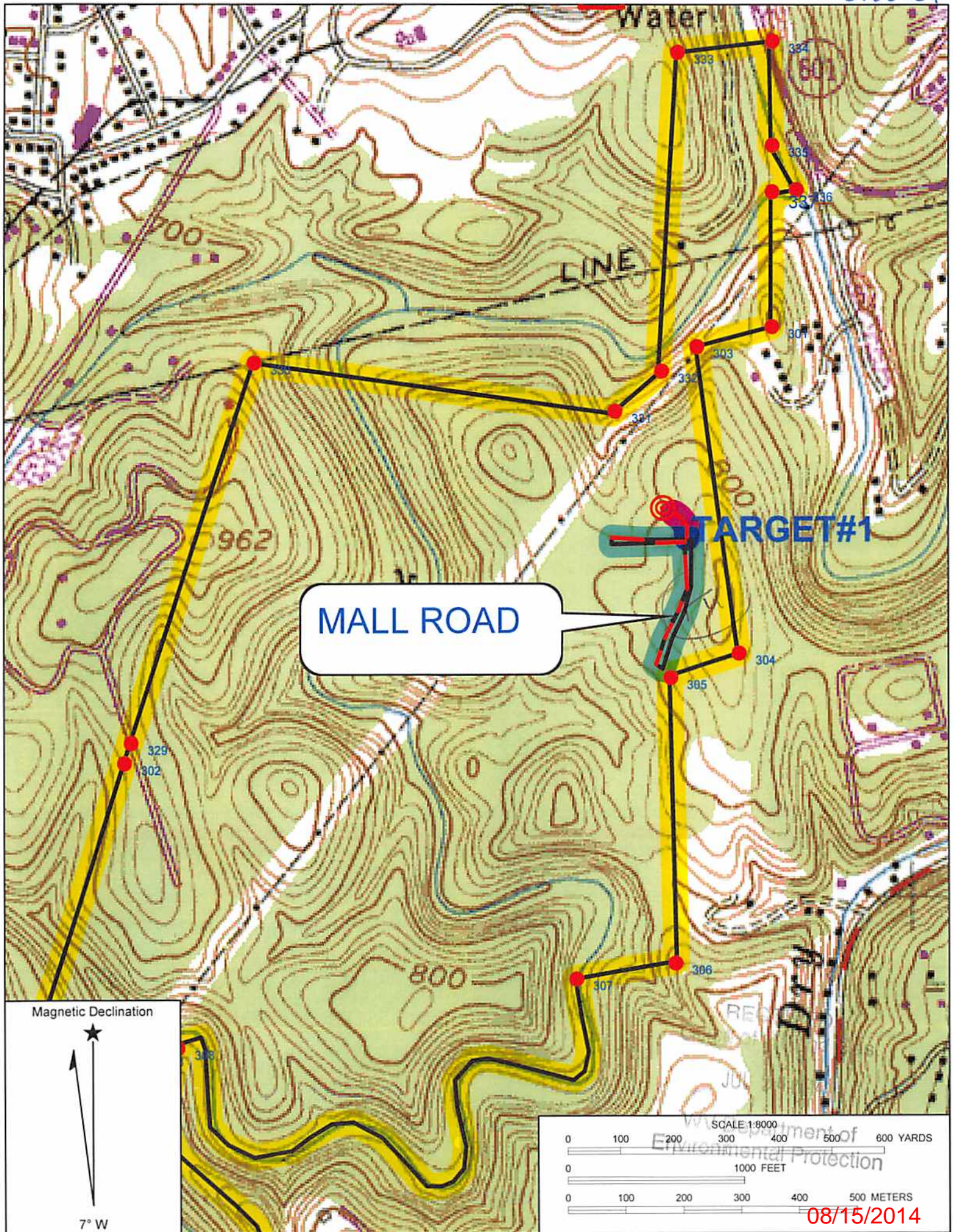


NOTE:

PIT SIZE: 25'x80' +/-
LOCATION SIZE: 100'x200' +/-



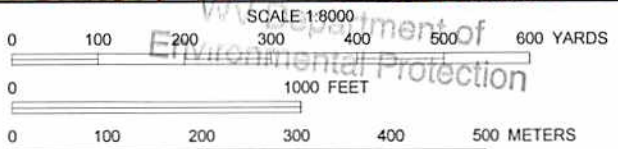
RECEIVED
Office of Oil and Gas
JUL 28 2014
WV Department of
Environmental Protection
08/15/2014



MALL ROAD

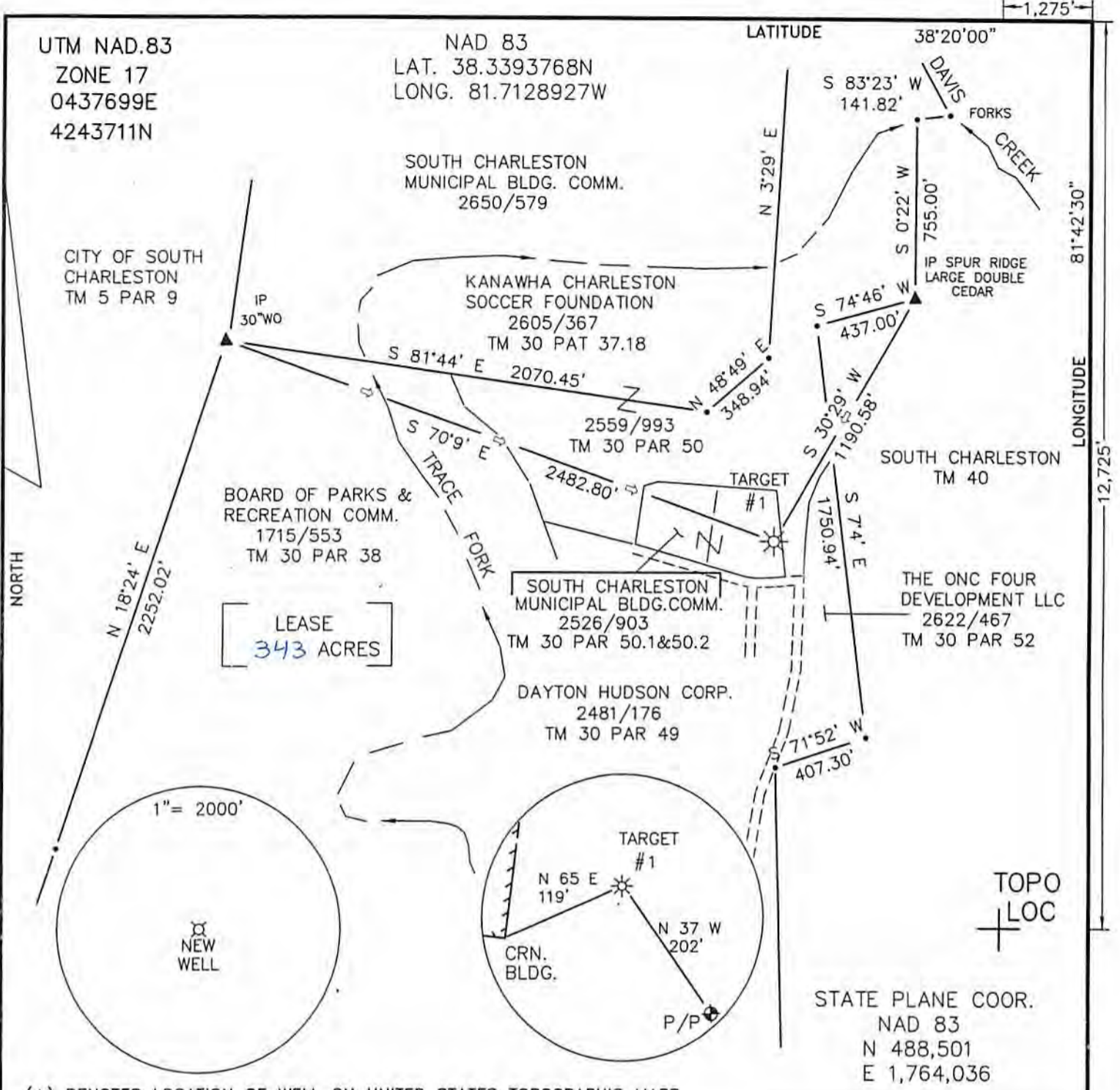
TARGET#1

Magnetic Declination



08/15/2014

39 06369



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. _____
DRAWING NO. 14-27
SCALE 1"=600'
MINIMUM DEGREE OF ACCURACY 1 IN 200
PROVEN SOURCE OF ELEVATION GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY

(SIGNED) _____
R.P.E. _____ P.S. 851



STATE OF WEST VIRGINIA
Department of Environmental Protection
OFFICE OF OIL AND GAS

DATE 5/13, 2014
OPERATOR'S WELL NO. TARGET #1
API WELL NO. 47 - 39 - 06369
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS") PRODUCTION STORAGE _____ DEEP _____ SHALLOW

LOCATION: ELEVATION 785 WATER SHED TRACE FORK OF DAVIS CREEK
DISTRICT SPRING HILL CORP COUNTY KANAWHA
QUADRANGLE CHARLESTON WEST

SURFACE OWNER SOUTH CHARLESTON MUNICIPAL BUILDING COMMISSION ACREAGE 2.3
OIL & GAS ROYALTY OWNER DANNY COCHRAN LEASE ACREAGE 343
LEASE NO. _____

PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHSYICAL CHANGE IN WELL (SPECIFY): _____

PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____

TARGET FORMATION BASE OF LOWER HURON/RHINESTREET ESTIMATED DEPTH 5500
WELL OPERATOR RESERVE OIL & GAS INC. DESIGNATED AGENT J. SCOTT FRESHWATER
ADDRESS 929 CHARLESTON ROAD ADDRESS 929 CHARLESTON ROAD
SPENCER, WV 25276 SPENCER, WV 25276

08/15/2014