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APPENDIX B See Appendix Cover Page for Listing of Contents

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FOREWORD

For over 100 years, exploration for oil and gas has occurred in the Commonwealth of Kentucky. Conservation of these resources was addressed by the ratification of the interstate compact to conserve oil and natural gas in 1942. This compact was later repealed, amended and re-enacted by joint resolution of the General Assembly in 1948.

Regulation regarding these exploration and conservation efforts began in 1960 by the formation of the Kentucky Oil and Gas Conservation Commission and the Oil and Gas Division under the Department of Mines and Minerals. From 1960 until the present, various other agencies have adopted regulations regarding the numerous activities related to the exploration of oil and gas in Kentucky. These agencies, as listed throughout this document, have developed regulations regarding the activities which in many cases overlap and possibly add confusion to the regulated community as to which agency and regulation apply to a given situation. In order to provide a better understanding of all the regulations and agencies responsible for these regulations, this manual was prepared. Use of this manual shall hopefully provide guidance to compliance with the respective regulation of the appropriate agency and the manner under which operations should be conducted.

The Division of Oil and Gas wishes to acknowledge and express appreciation to the following team members that participated in the preparation of this manual. They include the following: Rick Bender (resigned), Brian Gilpin (retired), and Marvin Combs from the Division of Oil and Gas, Dan Juett, Jim Sproles and Gene Blair (retired) from the Division of Water, James Hale and Tim Hubbard from the Division of Waste Management, Ralph Dennis from the Public Service Commission, Rodney Raby and James Helm from the State Fire Marshal's Office, and Charles P. Susie and Michael Sanders representing the Kentucky Oil and Gas Association.

In addition, the Division would also like to thank the U.S. Department of Energy for the financial support of this effort. The regulated community should use this document as a reference manual and shall serve as a useful tool for achieving compliance and fostering further exploration efforts in the Commonwealth of Kentucky. The Department of Energy should be commended for their support and encouragement of this and other similar projects.

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INTRODUCTION

This handbook was prepared by a task force consisting of representatives from state regulatory agencies and the oil and gas industry under a grant from the U.S. Department of Energy. The purpose of this handbook is to serve as a guidance document and reference manual for oil and gas well operators in dealing with state and federal agencies which regulate the various phases of drilling, production, operation and abandonment of oil and gas wells.

The manual is composed of sections listed in chronological order from Pre-Drilling through Well Abandonment which an operator would typically follow in drilling a well. A simplified step-by-step checklist using this format is included (See Pages xi-xiii). A Well Operator's Activity Chart is included describing regulatory agencies' involvement in the various phases of operation (See Pages xiv-xvii). A narrative describing each phase of well operation with regulatory agency requirements is included and listed in the Table of Contents.

The appendix contains directories of state and federal agencies and personnel, regulatory agency forms and other information to assist the well operator in complying with Kentucky statutes and regulations. Forms shown in Appendix B of this manual are for example and are not intended for official use. It is recommended the agency having regulatory control of the form be contacted concerning any requirements for form use and reproduction.

This manual is presented as a general reference and illustrates those practices which have been proven in a safe and workman-like manner to conform to State and Federal regulation at the time of printing. It is beyond the scope of this manual to cite every applicable state and federal regulation and statute, and thus this manual is not intended to take the place of one's responsibility to know and understand all applicable regulations and statutes. Statutes and regulations referred to in this manual are not provided in their complete form. The reader is encouraged to read the full text of each statute and regulation and seek counsel if and when necessary for clarification as to the applicability of each.

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SIMPLIFIED STEP-BY-STEP CHECKLIST (☑) PROCEDURE FOR DRILLING A WELL IN KENTUCKY

Section 1. Pre-Drilling and Permitting a Well

- Prepare a Game Plan** for each well drilled. It is recommended that the operator prepare an overall game plan that incorporates all actions to be undertaken by the operation. This plan should include all impacts to the environment and the rights of all parties involved.
- Post bond** with Division of Oil and Gas. See Page 1.
- Obtain a Gathering Line License** with Division of Oil and Gas. See Page 6.
- Prepare a well plat** of the well location. See Page 3.
- Obtain a well permit.** See Page 7.
- Obtain a flowline/gathering line permit.** See Page 8.
- Obtain permits for stream/river crossing.** See Page 14.
- Plan for management and disposal** of waste generated by the operation including construction of the drilling pit. See Page 21.

Section 2. Drilling

- Notify Division of Oil and Gas Inspector** (on permit) 24 hrs. before spudding. See Page 19.
- Construct drilling pit** adequate to contain drilling fluids and prevent flow into streams. See Page 21.
- Contain and dispose of drilling muds/fluids** in accordance with applicable regulations. See Page 21.
- Post drilling permit** at the well site during drilling.
- Set surface or intermediate casing** in accordance with regulations. See Page 17.
- Provide Oil and Gas inspector with total depth**, amount of casing, if run and cement quantity immediately following completion of drilling. See Page 17.

Simplified Step-by-Step Checklist (☑) Procedure for Drilling a Well in Kentucky

- Contain and clean-up oil spills, leaks, discharges or releases** of pollutants immediately. For reportable spills notify Environmental Response Team 1-800-928-2380. See Page 43.

Section 3. Well Completion and Operation

- File well records** with Division of Oil and Gas 90 days after reaching total depth. See Page 25.
- File As-Built well plat in coal areas and inclination/directional surveys** with Division of Oil and Gas 30 days after reaching total depth. See Page 26.
- Register tank battery** with Division of Water within 60 Days after production begins. See Page 29.
- Submit annual production report** to Division of Oil and Gas on or before April 15th for previous year. See Page 45.
- Dispose of waste** in accordance with applicable regulations. See Page 41.
- Contain and clean-up oil spills, leaks, discharges or releases** of pollutants immediately. For reportable spills notify Environmental Response Team 1-800-928-2380. See Page 43.

Section 4. Abandonment and Closure

- Plugging** well in accordance with Inspector's instruction. See Page 50.
- File plugging affidavit** with the Division of Oil and Gas. See Page 50.
- Remove debris** and associated equipment in conjunction with site closure. See Page 51.
- Remove equipment** upon closure of lease activities and contact Division of Water for inactivation of registration. See Page 51.
- Take steps** as necessary in order to prevent erosion and sedimentation including backfill of pits. See Page 52.

Simplified Step-by-Step
Checklist (☑) Procedure
for Drilling a Well in Kentucky

- Perform well site reclamation** on severed mineral tracts in accordance with applicable regulations. See Page 41.
- Contain and clean-up oil spills, leaks, discharges or releases** of pollutants immediately. For reportable spills notify Environmental Response Team 1-800-928-2380. See Page 43.
- Assure that all wastes have been properly disposed** and all releases have been cleaned up.
- Request release of bond** upon completion of site closure, filing of records or transfer of wells to another operator. See Page 53.

WELL OPERATOR'S ACTIVITY CHART

AGENCY ABBREVIATION

DOG-Division of Oil & Gas

DOW-Division of Water

DWM-SWB-Division of Waste Management-Solid Waste Branch

DWM-HWB-Division of Waste Management-Hazardous Waste Branch

SFM-Kentucky State Fire Marshal's Office

EPA-United States Environmental Protection Agency

ACTIVITY	STATE/FEDERAL REGULATORY AGENCY	FEE	PERMIT REQUIRED	REGULATORY AGENCY FORM NO.	TIME	ADMINISTRATIVE REGULATION or STATUTE	REMARKS
I. PRE-DRILLING							
Bonding of Well	DOG	Individual Bond Based on Depth	No	ED-5, ED-6 ED-14 ED-16 ED-20	Life of Well	805 KAR 1:050 KRS 353.590	Blanket Bond Individual Well Bond Based on Depth ** Page 1 **
Gathering Line Flow Line License	DOG	\$100	Yes	ED-2	Required Annually	805 KAR 1:190	Annually renewable license ** PAGE 6 **
Well Plat	DOG	None	No	Approved Well Plat	Less Than 1 Year Old	805 KAR 1:030 KRS 353.590 (4)	Reg. Eng. & L.S.-Coal Reg. L.S.-Non-Coal ** PAGE 3 **
Shallow Wells	DOG	Permit Fee (\$350)	Yes	ED-3	1 Year	KRS 353.510 KRS 353.610	Less than 4,000 Ft. or Below Devonian Shale ** PAGE 4 **
Deep Wells	DOG	Permit Fee (\$350)	Yes	ED-7 ED-3	1 Year	805 KAR 1:100 805 KAR 1:130	4,000 Ft. or Deeper East of 84 Deg. 30 Min. ** PAGE 5 **
Well Spacing Variance	DOG	None	No	None	None	KRS 353.620	Director Approval After Hearing ** PAGE 5 **
Well Permits	DOG	\$350	Yes	Approved Well Plat ED-1	1 Year	KRS 353.570 KRS 353.580 KRS 353.590	Required on All Wells Drilled, Deepend, or Re-Opened. Spud Within 1 Year ** PAGE 7 **
Gathering Line Permit	DOG	\$100-flowline \$200 gas flowline	Yes	ED-11		805 KAR 1:190	Required on all Wells Completed. ** PAGE 8 **
Well Permits In Coal Regions	DOG	Permit Fee [\$350]	Yes	ED-1	1 Year	KRS 353.050	15 Day Hold on Permit For Coal Co. Evaluation ** PAGE 10 **
Coalbed Methane Well Regulations	DOG	\$350	Yes	CBM-2	1 Year	805 Kar 9:010 Through 805 KAR 9:100	1,500 Ft. between CBM Wells 750 Ft. From Property Line ** PAGE 11 **
Well Permits In Gas Storage Fields	DOG	Permit Fee [\$350]	Yes	ED-1	1 Year	805 KAR 1:080	Notify Gas Storage Field Operator. ** PAGE 12 **
Well Permits on Severed Mineral Tracts	DOG	[\$100] See Remarks	Yes	ED-1 ED-10	1 Year	805 KAR 1:170 KRS 353.5901	\$100 Mediation Fee to Surf. Owner & Operator ** PAGE 13 **
Cross Wetlands, Wild Rivers, Stream Discharge	DOW	None	Yes	Construct across or along stream	Prior to Const.	401 KAR 4:060 KRS 151.125	Stream Obstruction Requires Permit ** PAGE 14 **
Well Site Waste Mgmt. Guidelines	DWM-SWB	None	None	None	None	401 KAR 4:060 401 KAR 47:030	Must Meet Environmental Standards ** PAGE 13 & 20 **

ACTIVITY	STATE/FEDERAL REGULATORY AGENCY	FEE	PERMIT REQUIRED	REGULATORY AGENCY FORM NO.	TIME	ADMINISTRATIVE REGULATION or STATUTE	REMARKS
Objection Well by Coal Oper.	DOG	None	No	None	None	KRS 353.060	D.O.G. Hearing ** PAGE 7 **
Twin Wells	DOG	Permit Fee [\$350]	Yes	Well Plat ED-3	1 Year	KRS 353.610 (2)	Wells Must Produce From Different Zones ** PAGE 16 **
Directional or Horizontal Wells	DOG	Permit Fee [\$350]	Yes	Well Plat ED-3 ED-7 ED-8	1 Year	805 KAR 1:020 805 KAR 1:140 KRS 353.550	Wellbore Cross-Section Revised Well Plat B.O.P. Required ** PAGE 16 **
Pooling of Oil & Gas Tracts	DOG	None	No	None	1 Year	KRS 353.630	Hearing Required ** PAGE 6 **
II. DRILLING							
Spudding-Drilling	DOG	See Well Permit	Yes	ED-3	1 Year	KRS 353.660	Notify DOG Inspector 24 Hrs Before Spud, Contact Inspector at Total Depth. ** PAGE 19 **
Drilling Pits	DOW	None	No	None	30 Days	401 KAR 5:090 KRS 151.125	Pits Must Contain all Fluids to Prevent Surface Water Contamination ** PAGE 21 **
Protection of Fresh Water Aquifers	DOG	None	No	None	None	805 KAR 1:020 KRS 353.520	Casing Set 30 ft. Below Aquifer, Cement to Surface ** PAGE 20 **
Drilling Through Minable Coal Seams	DOG	None	No	None	None	KRS 353.080 KRS 353.100	Casing Set 30' Below Coal Seam, Cement to Surface ** PAGE **
Drilling Fluids	DWM-SWB	None	Permit By-Rule	None	None	401 KAR 31:030 401 KAR 45:060 KRS 224.50-760	Disposal Requirements ** PAGE 22 **
	Ky. Geol. Survey						Required if Requested by Ky. Geol. Survey
	DOG	None	No	None	None		
Drill Samples	DWM-SWB	None	Permit By-Rule	None	None	401 KAR 31:030 401 KAR C.(30) 401 KAR 45:060	Must Meet Disposal Requirements. ** PAGE 23 **
Drilling Deeper Than Permitted Depth	DOG	Individual Bond May Be Increased With Depth	No	None	None	805 KAR 1:120 KRS 353.520	Notify D.O.G. Inspector, May Require Revision of Permit & Bond. ** PAGE 23 **
Blow-out Preventer (BOP)	DOG	None	No	ED-7	None	805 KAR 1:130 805 KAR 1:140 KRS 353.520	3,000 # Test Pressure 1,500 # Test Pressure ** PAGE 19 **
III. COMPLETION-OPERATION							
Well Completion				ED-3	90 Days		File ED-90 Days After Drilling, File Electric Logs
Filing of Well Records	DOG	None	No	ED-38	30 Days	KRS 353.660	File ED-38 if Plugged ** PAGE 25 **
As-Built Well Plat	DOG	None	No	"As Drilled " or "As Built" Well Plat	30 Days		Sur. Variance of 15 Ft., Subsurface Variance of 150 Ft. ** PAGE 26 **

ACTIVITY	STATE/FEDERAL REGULATORY		PERMIT REQUIRED	REGULATORY AGENCY FORM NO.	TIME	ADMINISTRATIVE REGULATION or STATUTE	REMARKS
	AGENCY	FEE					
Directional Inclination Survey	DOG	None	No	See Remarks	30 Days 60 Days		Active Mining Area-Directional Workable Coal-Inclination ** PAGE 26 **
Registration of Oil & Gas Facility [Tank Battery]	DOW	None	Yes	Oil & Gas Facility Registration Form	60 Days	401 KAR 5:090 KRS 151.125	Sign Posted With Company Name, Address & Phone No. & DOW Registration No. ** PAGE 29 **
Storage and Piping System Compliance	SFM	\$50.00	Yes	Const. Above Grd. Tanks Pet. Prod Haz. Mat.	Before Construction	815 KAR 10:050 NFFPA 30 Ky. Fire Prev. Code	Pipe & Tank Must comply with NFFPA 30 & Current Ed. of Ky. Fire Prev. Code ** PAGE 30 **
Danger Sign on Oil Storage Facilities	DOG	None	No	None	None	KRS 353.656	Posted on Oil Tank Battery ** PAGE 30 **
Spill Prevention Control and Countermeasure (SPCC) Plan	DOW	None	Yes	SPCC Plan	Upon Facility Start-Up	EPA 40 CFR Parts 110 & 112 401 KAR 5:090 KRS 151.125	Plan Must be in Accordance With 40 CFR 112 ** PAGE 31 **
Transfer of Well Ownership	DOG	\$25/Well	No	ED-13	None	KRS 353.590	New operator to File Updated Registration Form. ** PAGE 34 **
Holding Pits	DOW	\$100.00	Yes	Construction & Operation Plan	30 Days Before Construction	401 KAR 5:090 KRS 151.125	Pit Utilized for Storage of Produced Water. ** PAGE 35 **
Improperly Abandoned Wells-Temporary Abandoned Permits	DOG	None	Yes	Up to 2 Years	Up to 2 Years	KRS 353.550	File with Completion Report, Inspector Must Approve T.A. ** PAGE 36 **
Well Testing Permits	DOG	\$25/Well	Yes	Testing Permit Report of Invest.	60 Days	KRS 353.730	File Report of Investigation within 60 Days. ** PAGE 37 **
Injection Wells	EPA		Yes	7520-6		805 KAR 1:110	EPA (404) 347-3379) Requires Mechanical Integrity Test ** PAGE 38 **
Class II Wells	DOG	None	No	ED-23		805 KAR 1:020	
Produced Water Disposal	DOW	Depends Upon Disposal Method	Yes	Disposal of Produced Water K.P.D.E.S.	None	401 KAR 5:090 KRS 151.125	Disposal of Produced Water Must Not Violate Water Quality ** PAGE 39 **
Vacuum Pumps	DOG	None	No	ED-9	None	805 KAR 1:040 KRS 353.560	Identify All Wells Within 1,000 ft. ** PAGE 40 **
Operator Classification of Hazardous Waste	DWM-HWB	None	No	None	None	401 KAR 32:010 401 KAR Chap. 30 & 31 KRS 224.46-510	Generate less than 220 lbs. hazardous waste per month. ** PAGE 41 **
Groundwater Protection Plan (GPP)	DOW	None	No	None	Upon Facility Start-up	401 KAR 5:037 KRS 224.01-010 KRS 224.10-100	Have an acceptable GPP in accordance with KRS 224 ** PAGE 42 **

ACTIVITY	STATE/FEDERAL REGULATORY		PERMIT REQUIRED	REGULATORY AGENCY FORM NO.	ADMINISTRATIVE REGULATION or TIME	STATUTE	REMARKS
	AGENCY	FEE					
Reporting Spills, Bypasses Leaks of Oil Produced Fluids and Chemicals	DOW	None	No	None	Report Spills Immediately	401 KAR 5:015 401 KAR 5:090 KRS 224.10-100 KRS 224.70-110 KRS 151.125	Spills that reach water-ways and have potential impact contact DOW-ERT immediately at 1-800-928-2380 ** PAGE 43 **
	DWM-HWB	None	No	None	Report Spills Immediately	KRS 224.01-400 KRS 224.01-405	Otherwiae on soil report to DWM ERT if more than 25 gal. Of oil or 75 gal. of diesel fuel ** PAGE 43 **
N.O.R.M.	Cabinet for Human Resources	None	No	None			Monitor Tubulars for Radiation Exposure. ** PAGE 45 **
Oil & Gas Production Reporting	DOG	None	No	ED-17	*April 15	KRS 353.206	*File by April, 15th for Prior Yrs. Production ** PAGE 45 **
IV. ABANDONMENT & CLOSURE							
Plugging of Wells	DOG	None	No	ED-38	File 30 Days After Plugging	KRS 353.120	Contact Inspector for Plugging Instructions. ** PAGE 50 **
Termination of Oil & Gas Facility	DOW	None	No	None	After Operation Ceases	401 KAR 5:090 KRS 151.125 KRS 224.10-100	Tanks Removed, Site Reclaimed. * PAGE 51 **
Well Site Reclamation on Severed Mineral Tracts	DOG	None	No	ED-10	1 Year After P & A	805 KAR 1:150 KRS 353.5901 KRS 353.5901(5)	Inspection of Site 1 Yr. After Plugging and Reclamation of Well Site. ** PAGE 52 **
Bond Release	DOG	None	No	None	None	805 KAR 1:050 KRS 353.590 (5)	Well Plugged, Records Filed or Wells Transferred. ** PAGE 53 **
Bond Forfeiture	DOG	None	No	None	45 Days After Notification	805 KAR 1:050 KRS 353.590 (5)	Operator May Get Extension. ** PAGE 53 **
V. INSPECTION & ENFORCEMENT							
Division of Oil & Gas Inspection & Enforcement Policy	DOG	None	No	None	Anytime	KRS 353.220 KRS 353.990 KRS 353.991 KRS 353.992	Inspectors May Inspect Any Well and Gathering Line At Any Time ** PAGE 55 **
Division of Water & Waste Management Inspection & Enforcement Policy	DOW DWM	None	No	None	Anytime	401 KAR 5:090 KRS 224.10-100 KRS 224.10-410 KRS 224.99-010	Inspectors May Inspect Any Oil & Gas Facility At Any Time ** PAGE 55 **
Public Service Commission Enforcement Policy	PSC	None	No	None	Anytime	KRS 278.900 KRS 278.992	Inspectors May Inspect Any Pipeline Facility At Any Time ** PAGE 56 **

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REGULATORY AUTHORITY

Division of Oil and Gas

The Department for Natural Resources, Division of Oil and Gas is responsible for:

- Regulating the bonding, permitting, drilling, casing, operating and plugging of all wells and associated flow lines and gathering lines in Kentucky.
- Protecting the correlative rights of mineral owners.
- Conserving and protecting the crude oil and natural gas reserves of Kentucky.
- Ensuring fresh water aquifers and mineable coal seams are protected from unreasonable damage due to production of crude oil and natural gas.

Statute-KRS Chapter 353

Division of Water

The Department for Environmental Protection, Division of Water is responsible for:

- Preserving the water resources of Kentucky.
- Prevention, abatement and control of all water pollution.
- Regulating water pollution from oil and gas facilities.

Statute-KRS Chapters 146, 151 and 224

Division of Waste Management

The Department of Environmental Protection, Division of Waste Management is responsible for:

- Ensuring that waste management activities within Kentucky are conducted in a manner to protect human health and the environment.
- Regulating hazardous waste, solid waste, special waste, abandoned sites, underground storage tanks and remediation of chemical and petroleum releases to the environment.

Statute-KRS Chapter 224

Regulatory Authority

Public Service Commission

The Public Service Commission is responsible for:

- Inspecting and safety management of, natural gas transmission within the state and utility owned lines, compressor stations, meters, regulators and other pipeline facilities operated by oil and gas companies and natural gas utilities in Kentucky.
- Providing inspection and approval for farm taps.
- Responding to reported gas line leaks and potential hazards relating to state regulated pipelines.
- Regulating the rate utilities charge consumers for natural gas usage.
- Ensuring the quality of gas for consumers.

Public Service Commission responds to reported gas line leaks, potential hazards relating to pipelines as well as dictates the rate utilities charge consumers for natural gas usage.

Statute-KRS Chapter 278

State Fire Marshal's Office

The Kentucky State Fire Marshal is responsible for:

- Inspecting to ensure safe storage and handling of all flammable and combustible liquids near oil or gas wells and related production facilities.

Statute-KRS Chapter 227

Underground Injection Control Section

The U.S. Environmental Protection Agency, Underground Injection Control Section is responsible for:

- Preventing contamination of groundwater supplies from underground injection.
- Regulating Class II wells which are injection and/or disposal wells associated with the production of oil and natural gas.

Federal Regulation-40 CFR 100 to 149

I. PRE-DRILLING

Bonding

Division of Oil and Gas

The Division of Oil and Gas requires a performance bond to be on file before a well is drilled or acquired from another operator. This bond is posted to ensure the proper plugging and abandonment of wells and to ensure the filing of well records with the Division. Should an operator fail to correct a violation, the bond may be seized by the Commonwealth of Kentucky.

• **INDIVIDUAL BONDS** should accompany the well permit application when it is submitted to the Division of Oil and Gas. Bonds for individual wells are based on the well's total depth as listed below:

DEPTH (FT.)	BOND AMOUNT (\$)
0-500'	\$ 500
501'-1,000'	\$1,000
1,001'-1,500'	\$1,500
1,501'-2,000'	\$2,000
2,001'-2,500'	\$2,500
2,501'-3,000'	\$3,000
3,001'-3,500'	\$3,500
3,501'-4,000'	\$4,000
4,001' or Deeper	\$5,000 or an amount set by the Oil and Gas Conservation Commission.

• **BLANKET BOND** may be established to cover all wells operated by an operator and shall be on file at the Division of Oil and Gas prior to permitting or acquiring wells. Any violation against a well listed under a Blanket Bond will prohibit any future wells being permitted or transferred under that Blanket Bond. Forfeiture of any portion of a blanket bond will prohibit any additional operation.

The various types of bonds accepted for both blanket and individual bonds are listed below:

CASH – Certified Check, Cashier's Check, Money Order or CASH.

SURETY - Obtained from an insurance company. Division assigned "Power of Attorney" from insurance company.

LETTER OF CREDIT - Obtained from bank or other financial institution.

CERTIFICATE OF DEPOSIT - Obtained from bank or other financial institution. Original Certificate of Deposit must be on file with Division along with verification form. A Certificate of Deposit may serve for a blanket bond, provided the first five thousand dollars (\$5,000.00) of the blanket bond is posted with the division in cash.

INDIVIDUAL PROPERTY BOND – A lien on the property to cover one well for domestic use. The property bond must be combined with a \$1,000 cash bond.

BONDING AMENDMENT

KRS 353.590 has been amended due to legislative action to include a Blanket Bond Tier Schedule Effective July 15, 2006 based on the well operator being classified as “Qualified” or “Non-Qualified” as described below:

Qualified

- Operator must have a blanket bond on file prior to July 15, 2006 and have no outstanding, unabated violations.
- Operator must have a record on compliance with all DOGC statutes and regulations for a period of thirty-six (36) months.
- Provide proof of financial ability to plug and abandon wells covered by the blanket bond.

Qualified Blanket-Bond Tier Schedule

No. of Wells	Bond Amount
1-25 Wells.....	\$10,000
26-100 Wells.....	\$25,000
101-500 Wells.....	\$50,000
501+ Wells.....	\$100,000

An operator which is operating more than 25 wells under an existing blanket bond prior to this amendment will continue to operate under the \$10,000.00 bond. If new acquisitions or permitting places the operator in a new tier, the bonding guidelines for that tier will apply.

Non-Qualified

- Operator has more than ten (10) violations of KRS chapter 353 within the thirty-six (36) period.
- Operator has outstanding, unabated violations which have not been appealed.
- Operator has had a forfeiture of an individual bond or partial forfeiture of a blanket bond. And has no agreement with DOG for plugging of the well(s).
- Operator has a permit or permits upon which a portion or the entire bond has been forfeited and the proceeds have been spent by DOG to plug the well(s).

Non-Qualified Blanket-Bond Tier Schedule

No. of Wells	Bond Amount
1-100 Wells.....	\$50,000
101 + Wells.....	\$100,000

Regulation-805 KAR 1:050

Statute-KRS 353.590

Forms-Surety, Letter of Credit, Certificate of Deposit (Forms ED-5, ED-6, ED-16 and ED-20, See Appendix B)

Well Plat

Division of Oil and Gas

Before a well is permitted, the operator shall have a map or plat of the proposed well location drawn on 8 1/2" by 14" bond or tracing paper prepared by a land surveyor registered in Kentucky. If the well is in coal producing regions of Eastern Kentucky (Appalachian Basin) or Western Kentucky (Illinois Basin) both a registered engineer and registered land surveyor shall certify the plat. A map identifying the coal producing regions of Kentucky is located in Appendix A. The plat shall include and be prepared as follows:

- **Proposed well location, elevation and distance from property lines.**
- **Location of well by bearing and distance, relative to two permanent monuments that appear on a 7.5' USGS Topographic Maps.**
- **Latitude and longitude and Carter Coordinates for the proposed well location.**
- **Scale of the plat drawn on 1" equals 100', 200', 300', 400', 500', 600' or 800'.**
- **All oil or gas producing wells within 1,000' of the proposed well.**
- **Lease boundary, surface owner, mineral royalty owner and adjacent mineral owner.**
- **Elevation as determined by instrument or calculation.**
- **Certification of the plat by the surveyor, and engineer if required, reading as follows: "*I hereby certify that the above plat is accurate and correct and satisfies the requirements of 805 KAR 1:030 to the best of my knowledge and belief,*" followed by the written signature of the person preparing the plat, mailing address, registration number and telephone number.**
- **Date of plat within one (1) year of date of application of permit.**

After a well is permitted, the well location shall not be changed. Permitted wells which are drilled at a location other than the coordinates listed on the plat and permit are considered as wells drilled without a valid permit.

A well shall not be drilled within one hundred fifteen (150) feet of any building without a signed waiver from the building owner. The waiver shall be included with the well plat and permit application. An example of a properly prepared well plat is located in Appendix A.

*Regulation-805 KAR 1:030
Statute-KRS 353.590 Section 4
Time-Plat shall be less than 1 year old when submitted with permit application*

Shallow Well Definition and Spacing Requirements

Division of Oil and Gas

Oil and gas wells in Kentucky are classified as “shallow” or “deep” based on the total depth and location. Shallow wells are wells drilled to depths less than 4,000’ or where the base of the Devonian Shale exceeds 4,000’ in Eastern Kentucky. Minimum spacing for shallow oil and gas wells is described as follows:

- **Oil wells in non-coal areas drilled to a depth from the surface to 2,000’ shall be spaced 200’ from the property line and 400’ from an offset well producing from the same zone.**
- **Oil wells in non-coal areas drilled to a depth between 2,000’ and the deep well depth shall be spaced a minimum of 330’ from the property line and 660’ from an offset well producing from the same zone.**
- **Oil wells in coal areas drilled from the surface to the deep well depth must be spaced 330’ from the property line and 660’ from an offset well producing from the same zone.**
- **Gas wells drilled to a depth from the surface to the deep well depth must be spaced 500’ from the property line and 1,000’ from an offset well producing from the same zone.**

Statutes-KRS 353.510 and 353.610

Deep Well Definition and Spacing Requirements

Division of Oil and Gas

A deep well is any well drilled to a depth that exceeds 4,000' or to the base of the Devonian Black Shale in Eastern Kentucky if the base of the black shale exceeds 4,000'. Unit sizes for deep wells are established by the Oil and Gas Conservation Commission after a "wildcat" well has discovered a productive formation or multiple formations. A "wildcat" well is defined as a well in which there are no other deep wells of the same target formation within 25,000' of the permitted location. Once a wildcat well has found a discovery and the Commission has ordered the unit size, then other deep wells within 25,000' which target the same formation must be on approved units which are also established by the Commission. If an operator wishes to permit a well that is within 25,000' of wells on established spacing, and the proposed location is not on an approved unit, then the spacing shall be as follows:

- **Deep Gas Well drilled to a depth between 4,000' and 7,000' must be located in the center of a 281 acre square unit with sides of 3,500'.**
- **Deep Gas Well drilled to a depth greater than 7,000' must be located in the center of a 574 acre square unit with sides of 5,000'.**
- **Deep Oil Well drilled to a depth between 4,000' and 7,000' must be located in the center of a 70 acre square unit with sides of 1,750'.**
- **Deep Oil Well drilled to a depth greater than 7,000' must be located in the center of a 143 acre square unit with sides of 2,500'.**

The Division of Oil and Gas requires an operator to file a CASING AND CEMENTING PLAN when a deep well is permitted. This includes a schematic of the wellbore with type, weight, grade and approximate depths of casing strings and cement type, additives and quantity used on each casing string. A Blow-Out Preventer (BOP) shall also be installed with the type and brand included on the casing plan (See section on BOP for more information).

Regulations-805 KAR 1:100 Section 1-13 and 805 KAR 1:130

Form-CASING AND CEMENTING PLAN (Form ED-7, See Appendix B)

Kentucky Carter Coordinate System used to establish North-South baseline of deep well units

Variance from Well Spacing

Division of Oil and Gas

If a proposed well is closer to an existing well or property line than the minimum distances allowed, the operator may be granted a spacing variance if the permit application includes written consent from all owners of oil and gas interests affected by the proposed well. The Director may also grant a variance after a hearing is granted to justify the spacing conditions presented by the operator.

Statute-KRS 353.620

Pooling of Oil and Gas Interests

Division of Oil and Gas

If an oil and gas lease is located in such a position which prohibits drilling of a well due to size or other conditions, the Division may order a hearing to establish pooling of contiguous tracts. A pooling order establishes the authority for drilling and producing oil or gas wells in a manner in which all owners of oil and gas interests may elect to participate in drilling, production and share in revenues based on operating interest's proportional to individual owner's net oil and gas interest. A pooling order includes options available to non-voluntary interest owners for participation in the pooled unit. These options include:

- **Participation at full cost.**
- **Participation on a carried basis.**
- **Surrender for a determined value.**
- **Execute a lease to the well operator.**

Statute-KRS 353.630

Gathering Line License

Division of Oil and Gas

Oil and gas wells operators are required to obtain a Gathering Line Operator's License under 805 KAR 1:190. Well operators must complete the application for Gathering Line License (Form ED-2). The annual fee for the license is \$100.00 for commercial well operators and \$25.00 for a person or entity operating one (1) domestic gas well for the purpose of heating a domestic residential dwelling. An invoice will be mailed to the operator's business address during the first month of every new year.

Regulation: 805 KAR 1:190

Form: GATHERING LINE OPERATOR'S LICENSE (ED-2)

Well Permit

Division of Oil and Gas

An APPLICATION FOR PERMIT shall be filed with the Division of Oil and Gas before a well is **drilled, deepened** or **re-opened** for production of natural gas, crude oil, water supply for enhanced recovery, or injection into a reservoir for the purpose of enhanced recovery. A permit is also required to drill stratigraphic test holes or operate any well under violation in which the previous well operator's bond has been forfeited. The permit application is to include a fee of \$350.00 made payable to the "Kentucky State Treasurer," three copies of the well plat and if an individual bond is used, submit bond with application. Applicant should ensure the following information on the application is as follows:

- **Well operator's name shown on application shall be identical to name listed on bond.**
- **Well operator shall provide permanent street address (P. O. Box numbers are not acceptable).**
- **Person signing application shall be an officer or partner of the company and the title of person shall be typed or clearly written.**
- **Information on permit application (such as lease name, well number, elevation, and Carter Coordinate) shall correspond to the information on well plat.**
- **All blanks shall be filled in completely or the application will be returned.**

When the permit is issued, the well shall be spudded within one year of the date issued or the permit will expire. Wells drilled after a permit has expired are in violation. Samples may be requested on any well permit. If a permit has been stamped "Samples Required," or if so noted on the permit, refer to the Drill Sample Section.

Cancellation of permits before expiration requires the operator to contact the Frankfort office by letter, requesting the permit be canceled. The inspector will inspect the location and notification shall be sent to the operator once the permit has been cancelled. The operator should cancel a permit as soon as possible after the decision is made not to drill the well.

*Statutes-KRS 353.570, 353.580 and 353.590
Form-APPLICATION FOR PERMIT (Form ED-1, See Appendix B)
Fee-\$350.00
Time-Permit valid for 1 year from issue date*

Gathering Line Permit

Division of Oil and Gas

Completed oil and gas wells will be connected to flowlines or gathering lines, pursuant to 805 KAR 1:190. Well operators must submit a NOTIFICATION/APPLICATION FOR A GATHERING LINE PERMIT to the Division of Oil and Gas. In addition to the permit, the applicant is required to submit the appropriate permit fee in accordance to the type of flowline or gathering line. The fee schedule is shown below:

Type of Flowline/Gathering Line	Amount
Crude Oil or Water Flow Line	\$100.00
Natural Gas Flowline	\$200.00
Oil/Gas or Water Gathering Line	\$500.00

Included with the Gathering Line Permit, the operator must include a map drawn on an approximate scale of 1"=400' and must show the well location, permit number, the well operator's name, the route of the flowline and/or gathering line, and the connecting gas transmission lines or tank batteries. All gathering line maps will be digitized into the Division's ArcMap database. The database will be updated and migrated to the Kentucky Geological Survey's (KGS) Create a Gathering Line Map web page.

Forms are available and downloadable from the Division of Oil and Gas website at: <http://oilandgas.ky.gov/Pages/FormsLibrary.aspx>

Maps of Existing Gathering Lines

Pursuant to 805 KAR 1:190, oil and gas well operators must file a map which outlines the approximate locations of all existing gathering lines with the Division of Oil and Gas before September, 2005. The gathering lines may be noted on an enlarged section of a United States Geological Survey (USGS) 1:24000 (7.5') topographic map. The map may be enlarged to approximately 1"=400' and be submitted on an 8 1/2 in. x 14 in. sheet. If necessary, additional maps may be provided to fully document the total length of all existing gathering lines. The requirement for the filing of maps may also be satisfied by electronic submission subject to the Division being able to import and view the map files.

Maps for New Flow and Gathering Lines

The following information is required on the map submission:

- The approximate locations of property lines; dwellings; road and stream crossings; and environmentally sensitive features along the path of the gathering line.

- The names of the owners of surface tracts upon which the gathering line is to be installed, as identified as the party assessed for the purposes of property taxation in the records of the property valuation administrator of the county in which the land is located, unless listed in the legend.

- The approximate acreage to be disturbed along the path of the proposed gathering line.

- The above information shall be noted clearly and legibly on an enlarged section of a United States Geological Survey (USGS) 1:24000 (7.5') topographic map, which may be enlarged to approximately 1"=400' and be submitted on an 8 1/2 in. x 14 in. sheet. The requirement for the filing of maps may also be satisfied by electronic submission subject to the Division being able to import and view the map files.

Gathering lines that cross agricultural lands or that interfere with the use of a pre-existing private roadway must be buried to a minimum depth of twenty-four (24) inches. Gathering lines constructed of plastic shall be buried with a tracer wire for detection; the line shall also be protected from shear and tensile stresses. Plastic gathering lines may be temporarily installed on the surface for a period of up to two (2) years and protected from exposure to ultraviolet light and high/low temperatures.

Pipeline markers are also required above any active buried, gathering line. Each marker must contain the word "Warning" or "Danger" and also include the gathering line operator name, contact information, and twenty-four (24) hour emergency response phone number. Emergency response plans to address gathering line leaks and discharges and periodic inspection of gathering lines are also required.

The one-time fees are:

\$100.00 for an oil flow line.

\$100.00 for a water flow line.

\$200.00 for a gas flow line.

\$500.00 for gathering lines, where production from two or more wells are co-mingled.

Regulation: 805 KAR 1:190

Form: GATHERING LINE OPERATOR'S LICENSE (ED-11)

Well Permit Underlain by Coal Seams
Division of Oil and Gas

If the proposed well is underlain by coal seams leased to, or currently being mined by an individual or company, the well operator shall identify the person or company in Section 12 on the permit application. The well operator shall send a copy of the permit application and well plat, by registered or certified mail, to the company or companies operating those seams. The Division of Oil and Gas shall hold the permit application for fifteen (15) days to allow the coal company to evaluate the well location's impact on future mining plans. If the coal company objects to the location, the Division will schedule a hearing and notify the well operator and coal company. Based on information presented, the well location will be approved or moved to an alternate location as near to the original location as possible. The Division may waive the fifteen (15) day period if the coal company notifies the Division in writing. Information and mine maps are available at the Office of Mine Safety and Licensing (<http://minemaps.ky.gov>).

Statute-KRS 353.050

Coalbed Methane (CBM) Regulations

Division of Oil and Gas

Effective June 2005, administrative regulations 805 KAR 9:010 through 805 KAR 9:100 were promulgated, authorizing the Department for Natural Resources, Division of Oil and Gas to regulate the drilling and production of methane gas from coal seams (CBM) in the eastern and western Kentucky coal fields. Spacing requirements for CBM wells are different for conventional oil and gas wells referenced earlier in this manual. Listed below are CBM spacing requirements:

- **1,500 Ft.**-Spacing distance between CBM wells.
- **750 Ft.**-Distance from property boundary line.

In addition, domestic water wells within **1,250 ft.** of any CBM well require testing of the following constituents:

- TDS (total dissolved solids)
- pH
- Chlorides
- Bromides
- Acidity
- Sulfates

Listed below are the CBM regulations with a brief description for each regulation:

805 KAR 9:010 - Protection of fresh water zones in CBM wells.

805 KAR 9:020 - Well location and plat preparation of CBM wells.

805 KAR 9:030 - Surety Bonds; Requirements, cancellations.

805 KAR 9:040 - Plugging of CBM wells.

805 KAR 9:050 - Gas storage reservoirs, (drilling/plugging CBM wells near storage fields)

805 KAR 9:060 - Operating or deepening CBM wells/drill deeper than permit.

805 KAR 9:080 - Operation and reclamation proposal (CBM 11-~~{ED-10}~~ Rec. Plan).

805 KAR 9:090 - Production reporting of CBM production.

805 KAR 9:100 - Public liability/self-insurers-\$300,000 bodily/property, \$500,000 aggregate.

Bonding for CBM wells are \$5,000.00 for individual wells and \$100,000.00 for blanket bond.

The CBM regulations were generated from existing regulations but with minor changes such as groundwater monitoring and changes in casing programs to include surface casing being set thirty (30) ft. below the deepest fresh water zone and cemented to surface. Plugging and abandonment of a CBM will require the placement of a cement slurry plug extending at least forty (40) ft. below the coal seam, additional plugging requirements may be required by the inspector.

Forms: Permit Application - (CBM-2)

Completion Reports - (CBM-3)

Reclamation Plan - (CBM-11)

Regulation: 805 KAR 9:010 – 9:100

Well Permit in Gas Storage Area

Division of Oil and Gas

If a proposed well is located within a gas storage protection zone, the applicant shall identify the storage field operator in Section 13 of the permit application. Applicant shall submit a copy of the permit application and well plat to that operator when the permit application is mailed to the Division of Oil and Gas. The Division of Oil and Gas shall hold the application for five days to allow the storage field operator to evaluate the proposed well's impact on the storage reservoir. If the gas storage operator does not file an objection within that five (5) day period, the permit will be issued. If an objection is filed, the Division shall conduct a hearing and establish the manner in which the well is to be drilled.

Any well penetrating a gas storage reservoir shall be drilled in such a manner to effectively "case off" the storage reservoir and prevent the intrusion of oil, gas or water into the reservoir and protect the reservoir from a blow-out or waste of gas during drilling, completion or plugging. Information on the location of storage fields can be obtained at the Division of Oil and Gas and the Kentucky Geological Survey.

Regulation-805 KAR 1:080

Well Permits on Severed Mineral Tracts

Division of Oil and Gas

Proposed wells on Severed Mineral Tracts require the operator to submit a PLAN TO PREVENT EROSION OF AND SEDIMENTATION FROM A WELL SITE with the permit application. This plan shall include the following:

- **A brief description of the construction and excavation required in building the access road, well site and drilling pit.**
- **The proposed vegetation mixtures to be used for reclamation.**
- **An 8 1/2" by 14" diagram of the area to be disturbed drawn to a scale of 1"=400' containing the surface owner lease boundary, access road, well site, pit location, buildings, water wells, gas lines and storage facilities. The operator may use an enlarged area of a 7.5' USGS Topographic Quadrangle rather than constructing a separate drawing.**

The surface owner's notarized signature is required before the permit application is processed. If the surface owner refuses to sign, the well operator shall provide a copy of the certified mail receipt verifying Form ED-10 was received by the surface owner. The legal counsel from the Office of Legal Services, Department for Natural Resources will issue a letter requesting participation in a mediation hearing. If the General Counsel receives a request from the surface owner to participate in the mediation, an Order Scheduling Mediation is issued notifying the surface owner and well operator. Both parties must pay a \$100.00 mediation fee to participate in mediation. If the surface owner refuses mediation, the mediator will recommend the well operator's reclamation proposal and the permit will be processed. If the surface owner cannot be located, the operator shall publish a notice of intended activity in a local newspaper over two publishing periods and once in a statewide newspaper.

Regulation-805 KAR 1:170

Statute-KRS 353.5901

Form-PLAN TO PREVENT EROSION OF AND SEDIMENTATION FROM A WELL SITE (Form ED-10, See Appendix B)

Fee-\$100.00 Mediation Fee (If Required) Assessed to Surface Owner and Operator.

Stream Crossings, Wetlands, Wild Rivers, Discharges to Streams

Division of Water

The installation of pipelines, bridges and/or culverts in a stream introduces obstructions to that stream's flow. The placement of fill, construction of a pond or dam or any other activity that would introduce an obstruction to a stream or impact the floodplain, requires a floodplain permit or a letter stating an exemption has been granted. Before installation, the Kentucky Division of Water, Floodplain Management Section and the local Floodplain Coordinator should be contacted. Stream obstructions may be of a temporary nature and the season of use determines whether a permit is needed rather than a letter of exemption. The guidelines and a diagram for a typical low water crossing are listed in Appendix B.

Floodplain activities involving one acre or more of a wetland or along two hundred (200) linear feet of a blue line stream, as designated on a USGS Topographic Map, will require a permit from the U. S. Army Corps of Engineers and the Division of Water. The Division of Water recommends that the applicant hold a pre-application meeting with all concerned agencies and appropriate regional offices which are listed in Appendix A.

Some segments of the Waters of the Commonwealth and their adjoining land areas are designated by the General Assembly as wild river corridors. Wild river corridors are covered under management plans, developed to protect the special features of each river area. A CHANGE OF USE PERMIT or the approval of the Natural Resources and Environmental Protection Cabinet Secretary is required for any activity that has the potential to adversely affect a wild river corridor. The cabinet shall be notified in advance of that activity so that the activity's need for a Change of Use Permit can be determined.

In a wild river corridor, the following would need to be addressed for the activities of oil and/or gas exploration and production:

- **Road construction.**
- **Utility right-of-way.**
- **Area of disturbance shall not exceed sixty (60) ft. by one hundred (100) ft.**
- **Pits constructed to hold drilling fluids or brine are to be located beyond areas prone to flooding and constructed according to Holding Pit requirements.**
- **Written notification to the Division of Water shall be provided for the planned dates of drilling.**
- **No produced water shall be discharged into the surface or groundwaters within a Wild River Corridor.**
- **Dust control measures shall be taken to prevent dust particles from entering into surface water.**

- **Pipelines shall follow access roads and shall not be routed across a wild river.**
- **Produced water shall be in a closed tank and have a minimum 30 day storage capacity and fluids shall be removed before they reach two-thirds the tank's capacity.**

The Division of Water recommends that a pre-application meeting with all concerned individuals and agencies be scheduled; check Appendix A for the appropriate regional office. Wild river corridors and their dates of designations are listed in Appendix A and the Change of Use Permit Application form in Appendix B. USGS topographic maps are available showing the boundaries of the wild river corridors. Contact the Wild Rivers Program, Division of Water, Department for Environmental Protection, 200 Fair Oaks Lane, Frankfort, Kentucky 40601, or call (502) 564-3410 if you have any questions.

*Regulations-401 KAR 4:060, 401 KAR 4:100 through 4:140, 401 KAR 5:029 Section 2, and 401 KAR 5:031
Statutes-KRS 146.250, 146.270, 146.280, 146.290, 146.350, 146.990, 151.125,151.140, 151.250, 224.10-100 and 224.70-110
Federal-Clean Water Act, Section(s) 401 and 404
Form-Permit to Construct Across or Along a Stream, Change of Use Permit (See Appendix B)*

Twin Wells

Division of Oil and Gas

When an operator applies for a well permit which will be “twinned” near an existing well, the existing well’s permit number and producing formation shall be identified in Section 20 of the permit application along with steps taken to ensure the proposed twin well does not produce from the same zone as the existing well. In addition, the following information shall be presented on the “twin well” plat:

- **The geologic zones to be produced in each well shall be identified on the well plat and the distances between them indicated.**
- **All wells shall be identified by permit number (if available) and well numbers.**

A completed well plat containing information on twin wells is included in Appendix B.

Statute-KRS 353.610 Section 2
Form-WELL PLAT

Directional or Horizontal Wells

Division of Oil and Gas

The well operator shall submit a permit application with a cover letter requesting a permit to drill a horizontal or directional well. In addition to information required on a conventional well plat, the plat shall also include:

- **The proposed target location with respective Carter Coordinates.**
- **The proposed drill path or course of the well with distance and bearing.**
- **Identification of the Intersection Length (Horizontal distance between point at which well penetrates top of target formation and end point within that formation).**
- **A dashed line shall be drawn around intersection length to avoid conflicts with spacing requirements.**

The well operator shall submit to the Division three copies of a cross-section of the proposed wellbore prepared by the contractor responsible for the directional control mechanism. The cross-section shall include:

- **The kick-off point or depth at which deviation is started.**
- **Known coal seams to be intersected.**

- **Proposed producing formation(s).**

- **Proposed target formation.**

A CASING AND CEMENTING PLAN shall be prepared detailing the casing size, type, weight/ft., grade and depth to be used along with cement class, weight, additives and quantity used on each casing string. A Blow-Out Preventer (BOP) is to be used in the event high pressure is encountered during drilling and information relative to the brand and type of BOP is required on Form ED-7 (See section on BOP for more information). The operator shall also file an OPERATOR CERTIFICATION OF FORMATION OFFSET AND VERTICAL DEPTH which lists tops and bottoms of formations and coal seams penetrated with the lateral offset (in feet) from the well site and the true vertical depth of those zones. Any coal operator or owner adversely affected by directional drilling shall be supplied with copies of the pre-drill well plat and cross-section diagram before drilling and directional surveys and copies of wellbore cross-sections within ten days after drilling.

The well operator shall notify the oil and gas inspector at least forty-eight (48) hours prior to spudding a directional well. When filing well records or providing the inspector with information, the operator should differentiate between true vertical depth and measured depth as measured depth will exceed true vertical depth due to curvature of the wellbore. Within ten (10) days after the well has been drilled the operator shall provide the Division with copies of directional surveys, three copies of cross-sections of the wellbore with drill path of the borehole, coal seams, target formation(s) and kick-off point.

Regulation-805 KAR 1:140

Statute-KRS 353.550

Form-WELL PLAT

CROSS-SECTION OF WELLBORE (Prepared by Directional Survey Contractor).

CASING and CEMENTING PLAN (Form ED-7, See Appendix B) OPERATOR CERTIFICATION OF FORMATION OFFSET and VERTICAL DEPTH (Form ED-8, See Appendix B)

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II. DRILLING

Spudding-Drilling

Division of Oil and Gas

Before drilling operations begin, the operator shall notify the oil and gas inspector (identified on the permit) at least one day prior to spudding. A copy of the permit shall be kept at the well site during drilling operations. Casing requirements for the protection of fresh water zones and mineable coal seams are detailed later in this manual. When drilling is completed, the operator shall supply the inspector with the total depth, size and amount of casing strings with cement quantities, and completion status of the well.

The operator shall file a WELL LOG AND COMPLETION REPORT within ninety (90) days after total depth is reached. If the well is to be plugged immediately after drilling, the operator shall obtain plugging instructions from the inspector (refer to section on Plugging of Wells in the ABANDONMENT and CLOSURE chapter of this manual).

Statute-KRS 353.660

Form-WELL LOG AND COMPLETION REPORT (Form ED-3, See Appendix B)

Blow-Out Preventer Requirements

Division of Oil and Gas

If a deep or directional well is being drilled, a blow-out preventer (BOP) with a working pressure of one-thousand five hundred (1,500) psi and test pressure of three-thousand (3,000) psi, may be required to prevent the uncontrolled flow of high-pressure gas or formation fluids from the wellbore to the surface or into lower-pressured subsurface zones. The BOP must be designed to:

- **Close the well at the surface.**

- **Control the release of formation fluids.**

- **Permit pumping into the wellbore.**

- **Allow movement of the drill pipe.**

On “deep” wells, the BOP shall be installed prior to the depth required for the well to be classified as a deep well, preferably after surface or intermediate casing is cemented. The BOP should be tested before the casing shoe is drilled out and test results kept at the well site for review by the inspector. Information on the type, brand, working and test pressures are to be included on Form ED-7, which is required for deep and directional wells. The Director may waive the use of a BOP if the operator presents geologic and reservoir data from adjacent wells of the target formation showing pressure measurements do not require the use of a BOP.

Regulations-805 KAR 1:130 Section 3 and 1:140

Statutes-KRS 353.520 and 353.550

Form-CASING AND CEMENTING PLAN (Form ED-7, See Appendix B)

Emergency Situations

Division of Oil and Gas

The inspector, and inspector supervisor are to be notified immediately in the event of an accident or situation occurring at a wellsite which may endanger the environment; public and/or employee safety; or natural resources of the Commonwealth (see Appendix A for Inspector Directory). This includes blowouts; release of H₂S; N.O.R.M. exposure; well fires; gathering line/flowline leaks; oil spills; and gas leaks. Under direction from the inspector and other regulatory agencies, the well operator must take corrective measures to ensure minimal health and environmental damage.

Well operators are encouraged to use “best management practices” when producing oil and gas to reduce danger and perform periodic risk assessment to evaluate safety practices.

Statute-KRS 353.500

Protection of Fresh Water Zones

Division of Oil and Gas

The well operator is required to circulate cement to surface in the annular space between casing and wellbore to protect fresh water zones from contamination with crude oil, natural gas and brine fluids. When the well is being drilled, surface or intermediate casing strings, whichever are set through the fresh water zone, shall extend at least thirty (30) feet below the deepest known fresh water and cemented to surface. If the well is to be plugged, recoverable casing shall be cemented to the surface or pulled. The approximate deepest fresh water zone is identified on the permit. Any questions should be directed to the inspector.

Regulation-805 KAR 1:020
Statute-KRS 353.520

Drilling Pits

Division of Water

Drilling pits shall be constructed to have the capability and the capacity to contain drilling fluids so contamination of the waters of the Commonwealth does not occur. Spills or releases having the potential of degrading the environment or impacting human health and safety must be reported to the Environmental Response Team at (502) 564-2380 or 1-800-928-2380. For drilling and workover activities, the following need to be addressed:

- **A pit must be constructed which will contain all the cuttings and fluids anticipated for the area and depth to be drilled. Adequate freeboard (distance of fluid level in pit to upper rim) should be maintained and checked regularly during drilling. If necessary, a secondary pit should be constructed in such a manner as to contain or prevent overflow.**
- **Containment structures should be placed to contain all spilled fuel, crude oil and drilling fluids.**
- **Consideration given to the type of material used in the construction of the pit to prevent groundwater contamination and leakage.**

Within thirty (30) days following completion of drilling activities, the pits shall be closed. Waste shall be removed from the pit and disposed of in accordance with Kentucky laws and regulations. All visible contamination must be removed from the pit during closure. The appropriate waste disposal method is dependent upon the waste's components (make-up). The pit area shall be backfilled, graded and revegetated. The vegetative cover shall be capable of preventing soil erosion.

Pits in place longer than thirty (30) days shall be considered as "Holding Pits" and shall meet their requirements (See Holding Pits). However, the Director of the Division of Water may, with good cause, extend the pit's life up to a maximum of ninety (90) days. A written request seeking that extension should be submitted before the day of completion.

Regulation-401 KAR 5:090 Section 10
Statutes-KRS 151.125, 224.10-100 and 224.70-110

Storage of Drilling Fluids

Division of Waste Management

Oil production brine pits and drilling mud pits that are regulated by the Division of Water are also regulated by the Division of Waste Management as permit-by-rule sites. For permit-by-rule sites, the operator does not need to submit any paperwork to the Division, but the operator must avoid any activity that would cause environmental problems, such as surface water or groundwater pollution. If permit-by-rule sites do cause environmental problems, the operator is subject to fines and possible imprisonment, in accordance with applicable statutes.

Regulations-401 KAR Chapter 30, 401 KAR 31:030 and 45:060
Statute-KRS 224.50-760

Handling and Disposal of Trash

Division of Waste Management

Trash, including any discarded paper, soft drink cans, trees, brush, and other waste material, must be hauled off-site for recycling or disposal in an approved landfill. These materials must not be placed in the pit or otherwise disposed of on-site, unless a permit is obtained from the Division of Waste Management. To locate recyclers and the landfills nearest you, contact the appropriate Division of Waste Management field office (See Appendix A). A list of approved landfills is in Appendix A. Some specific waste provisions are as follows:

- **BURNING** - Except for land clearing debris (trees and brush), waste must not be burned. When burning land and clearing debris, the operator must comply with requirements of the Division for Air Quality (502-573-3382) and with any local ordinances (contact your local courthouse to determine whether there are any local ordinances on burning).
- **ROAD OILING** - Road oiling must not occur. Used oil must be burned in a space heater in accordance with hazardous waste regulations, or it must be taken to a collection center to be recycled or burned for energy recovery. To locate a collection center in your area, contact the Kentucky Division of Energy (1-800-282-0868). Refer to “Disposal of Tank Bottom Sediments” on page 18.
- **TIRES** - Waste tires may be temporarily stored on-site, if they are covered with a tarp or are otherwise managed to prevent the entrapment of water. If you accumulate more than 100 waste tires, which would be rare at an oil and gas operation, you must register with the Division of Waste Management and comply with the waste tire control program. As with other solid waste, tires must not be burned, and they must be taken to a permitted landfill or recycler.
- **LEAD ACID BATTERIES** - Used lead acid batteries must be taken to a wholesaler or retailer of new batteries, a battery recycling facility, a secondary lead smelter, or a collection center that delivers to a recycler or smelter. Broken batteries are considered hazardous wastes and spill residue must be restored and contained.
- **SINKHOLES** - Waste must never be put in or next to a sinkhole.
- **STREAMS** - Waste must not be placed in or next to a stream.

Regulations-401 KAR 30:031 and 401 KAR 31:010
Statutes-KRS 224.40-100, 224.40-305, 224.50-410, 224.50-413, 224.50-826, and 224.50-832

Drilling Through Coal Seams

Division of Oil and Gas

Wells penetrating mineable coal seams shall be drilled in such a manner as to protect the seam from oil and natural gas pressure, or water being produced from deeper zones. Surface or intermediate casing strings shall extend at least thirty (30) ft. below the deepest mineable coal with cement circulated to surface. Areas where multiple coal seams are present shall be “cased-off” in a similar manner. Casing set to protect coal seams shall remain in place for the life of the well. If a well penetrates a seam which has been “mined-out,” a liner may be set or cement baskets on a casing string may be installed. If a liner is installed, it shall be set twenty (20) ft. below the coal seam and extend to at least twenty (20) ft. above the seam. Casing shall then be installed through the liner and the annular space between the casing and liner cemented. The preferred method would be to install a cement basket at the top of the seam.

Statutes-KRS 353.080 and 353.100

Drill Samples-Generation and Storage

Division of Oil and Gas

The Kentucky Geological Survey’s Well Sample Library maintains catalogues of drill cuttings of wells strategically located throughout Kentucky. If the samples are requested by the Survey, the well permit will be stamped accordingly. The operator shall deposit the samples at the nearest collection facility provided by the Survey. See Appendix A for a listing of collection facilities.

Statute-KRS 353.660

Drilling Deeper than Permitted Depth

Division of Oil and Gas

If an operator drills a well deeper than the permitted depth listed on the permit, the following steps are required:

- **The operator shall notify the inspector or inspector supervisor the next working day.**
- **The operator shall amend the permit to the current depth of the well within ten (10) days.**
- **The operator shall submit additional bonding to reflect the depth within ten (10) days (only for individual well bonds).**
- **The depth shall not cause the well to be in violation of spacing requirements discussed earlier in this manual.**

Regulation-805 KAR 1:120

Statute-KRS 353.590 Section 6

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III. COMPLETION-OPERATION

Well Completion-Filing of Well Records

Division of Oil and Gas

Within ninety (90) days after a well has reached total depth, the well shall be completed as a producing well or dry hole and the operator shall file a WELL LOG AND COMPLETION REPORT with the Division of Oil and Gas. The completion form shall be completed in its entirety or it will be returned to the operator.

Copies of electrical or geophysical logs (if run) shall be submitted with the completion report. If the well is plugged, a PLUGGING AFFIDAVIT shall be submitted identifying the depths and quantity of cement plugs, types and depths of other plugs (brush, bridge, etc.), casing pulled and casing left in the well.

All well records are forwarded to the Kentucky Geological Survey and kept on file for public access. At the request of the well operator, the Division of Oil and Gas may hold all information confidential for one (1) year from the date received from the operator.

Statute-KRS 353.660

Form-WELL LOG AND COMPLETION REPORT (Form ED-3, See Appendix B)

PLUGGING AFFIDAVIT (Form ED-38, See Appendix B)

“As-Built” or (As-Drilled) Plat Requirements in Coal Areas

Division of Oil and Gas

As a result of legislative action that became effective in June, 2009, an “As-Built” or “As-Drilled” well survey plat using NAD 83 with Single Zone Projection shall be completed on any oil or gas well drilled in the eastern or western Kentucky coal fields. The plat must be prepared by a registered engineer and land surveyor. Wells drilled in coal fields are granted a surface variance of fifteen (15) feet from the permitted location and a subsurface variance of one hundred fifty (150) ft. from true vertical at the base of the deepest workable coal seam. If the subsurface variance exceeds 150 ft, at the base of the deepest workable coal seam, action to remediate may be necessary and may include plugging of the well.

Upon receipt of a well permit application, the permit is reviewed by the Mine Mapping section of the Office of Mine Safety and Licensing to determine if the proposed well will penetrate coal seams designated as a “Workable Coal Bed or Seam” or an “Active Mining Area”.

A workable coal bed or seam is defined as:

- A coal bed actually being operated commercially,
- A coal bed that the department decides can be operated commercially and the operation of which can reasonably be expected to commence within not more than ten (10) years, or
- Any coal bed that, from outcrop indication or other definite evidence, proves to the satisfaction of the department to be workable and, when operated, will require protection if wells are drilled through it.

Wells penetrating a workable coal bed must submit an “as-built” plat to the Division of Oil and Gas within thirty (30) days at the conclusion of drilling operations. In addition, an inclination survey must be run at a depth below the deepest workable coal on the well within ten (10) days of drilling the well and submit the survey to the Division with the “as-built” plat. If the well location is within an active mining area, the well operator must run a directional survey at a depth below the deepest workable coal within ten (10) days of drilling the well and submit the survey to the Division with the “as-built” well plat within thirty (30) days. An "Active Mining Area" means the area within two-hundred (200) feet surrounding current mine works under development, inclusive of the area of five (5) year projections, as indicated on the annually filed mine license map filed by coal operators and submitted to the Office of Mine Safety and Licensing.

When a well permit is issued, the depth of the deepest workable coal will be identified on the permit along with the requirement for an “as-built” plat and either an inclination or a directional survey.

For wells outside an active mining area, the coal operator can request the well operator to run a directional survey. This survey shall be done within sixty (60) days of the coal operator’s request and ran at the coal operator’s expense.

Gathering lines installed across terrain with a slope greater than twenty (20) degrees will be required to mark the location of the line every two hundred fifty (250) ft. with pipeline markers.

NOTE: To access Kentucky Mine Mapping Information System (<http://minemaps.ky.gov>) use Spot Well Utility link to determine if well penetrates “active” or “workable” seam.

KRS Chapter 353 and 352

Form: “As-Built” Well Plat

Inclination/Directional Survey Required

Hydraulic Fracturing (Use of Diesel Fuel)

U.S. Environmental Protection Agency (USEPA)

The use of diesel fuel as an additive in fracturing fluids shall be regulated under the Underground Injection Control (UIC) program pursuant to the Safe Water Drinking Act. Any well owner/operator that contracts with a well service company to use diesel fuel as a fracturing fluid or an additive must first obtain a Class II permit from USEPA-Region VI prior to performing the fracturing treatment. If the Division of Oil and Gas receives primacy of the UIC-Class II program, the well operator must comply with any provisions as it relates to stimulation using diesel fuel as directed by USEPA.

Disposal of Completion Fluids

Division of Waste Management

Completion fluids fall under the definition of solid non-hazardous waste. Temporary storage of these fluids is regulated as a solid waste permit-by-rule. Permit-by-rule sites do not need to submit any paperwork to the Division, but do need to comply with the environmental performance standards. Disposal of such waste is not covered by a permit-by-rule, and the applicable regulations depend on the disposal method to be employed. In order to dispose of the waste at the site by applying it to the land, a permit shall be obtained. The waste can be hauled off-site and disposed of in a permitted solid waste landfill, as long as it is allowed under the permit for that landfill.

Regulations-401 KAR Chapter 30, 401 KAR 31:030, 401 KAR 47:030 and 401 KAR 47:150

Registration of an Oil and Gas Facility

Division of Water

Within sixty (60) days after the facility begins producing oil and/or gas, the facility shall be registered with the Division of Water. A tank battery and its associated wells, pits and other associated structures constitute one facility. Facilities not associated with a tank battery shall be registered individually.

Dry gas wells are exempt from the registration requirements, provided they are permitted with the Division of Oil and Gas. Operators of dry gas wells having produced water are required to dispose of it by utilizing an approved method (See Produced Water Disposal).

Notification of the assigned registration number is sent to the owner/operator by certified mail. The operator is required to post a waterproof sign at each facility. The sign shall be of a size and type, approved by the Director and identify the operator's name, address, phone number and the facility's registration number. The phone number listed shall be a number that can access a company representative throughout any part of a twenty-four (24) hour period.

The registration number is active for the life of the oil and gas facility. It is terminated when the facility and associated structures are removed and the site reclaimed to prevent soil erosion.

Regulation-401 KAR 5:090 Section 4

Statutes-KRS 151.125, 224.10-100 and 224.70-110

Form-OIL AND GAS FACILITY REGISTRATION FORM (See Appendix B)

“DANGER” Signs Posted on Storage Facilities
Division of Oil and Gas

The Division of Oil and Gas requires well operators to post **DANGER** signs in a prominent location on all storage facilities and tank batteries that are active or abandoned. The sign shall be approved by the Division. An approved sign may be obtained from the Kentucky Oil and Gas Association (KOGA) or the operator may make a similar approved sign (See Appendix A).

Regulation-805 KAR 1:160

Storage and Piping System Compliance
State Fire Marshal’s Office
Hazardous Materials Section

The storage and handling of all flammable and combustible liquid at gas or oil wells and related production facilities shall comply with the requirements of NFPA 30 and the Kentucky Fire Prevention Code.

Regulation-815 KAR 10:050

Code-NFPA 30 and the Kentucky Fire Prevention Code

Form-PERMIT FOR CONSTRUCTION OF ABOVE GROUND STORAGE TANKS FOR PETROLEUM OR HAZARDOUS SUBSTANCE (See Appendix B)

Fee-\$50.00

Spill Prevention Control and Countermeasure (SPCC) Plan

Division of Water

Spill Prevention Control and Countermeasure (SPCC) Plans are required for any single above ground container with a capacity of more than six hundred sixty (660) gallons and for two or more above ground tanks which exceed one-thousand three hundred two (1,320) gallons collectively. SPCC Plans require the following:

- **A bermed area around the tank(s) having the capacity to contain the fluid volume of the largest tank.**
- **A list of containment or diversionary structures (dikes, impervious liner, berms, etc.) for each tank and/or tank battery.**
- **For each tank, prediction of quantity of oil that would be spilled and direction of flow should the tank rupture or overflow.**
- **An oil spill contingency plan stating steps of action in handling an oil spill; such as, using oil booms, sorbent material and who would be notified.**
- **List of manpower, equipment and materials available to carry out the plan.**
- **Familiarize operating personnel with the plan.**

The dike or berm around the tank battery shall provide a containment area sufficient enough to hold the volume of the largest tank within the tank battery. The dike or berm shall be constructed to prevent contact of storm water runoff from the outlying area with the area it encloses. Spills, leaks or bypasses contained within the spill prevention, control and countermeasure (SPCC) of a facility need to be reported and cleaned up. These events have the potential to impact groundwater and storm water.

Storm water and other fluids shall not be allowed to accumulate within the containment area; in doing so, the SPCC Plan is not sufficient. The Plan does not need to be submitted to the Division of Water for approval but, may be required for certain facilities on a case-by-case basis. The SPCC Plan shall be reviewed and certified by a Registered Professional Engineer.

Regulation-401 KAR 5:090, Section 13

Statutes-KRS 151.125, 224.10-100 and 224.70-110

Code of Federal Regulations-40 CFR Part 110 and Part 112

Underground Storage Tanks

Division of Waste Management

Regulated underground storage tanks (USTs) shall be registered with the Underground Storage Tank Branch. This includes tanks larger than one-hundred ten (110) gallons that have ten percent or more of the tank volume including piping beneath the surface of the ground. Specific requirements for leak detection, release reporting, closure, corrective action and financial responsibility for regulated USTs are found in 401 KAR Chapter 42.

For oil and gas facilities, liquid traps or associated gathering lines directly related to oil or gas production and gathering operations are exempt from the UST regulations. Any underground or above ground storage tanks that are exempt from the UST regulations do not have to be registered or be subject to annual fees. Exempt tanks do not have to be closed unless there is a release from the tank.

(See Section III, subsection on Cleanup of Oil, Protected Fluids and Chemical Spills). The Superfund Branch handles closure of exempt tanks and petroleum releases. Forms to register USTs may be obtained from the UST Branch of the Division of Waste Management at (502) 564-6716.

Regulations-401 KAR Chapters 30 to 42

Statute-KRS 224.60-100 to 224.60-160

Forms-DEP-5024 (Registration of tank), other forms necessary for closure

Time-Notification shall be submitted within thirty (30) days of bringing tanks into use.

Fee-\$30.00 per year

Disposal of Tank Bottom Sediments (BS)

Division of Waste Management

Tank bottoms are exempt from hazardous waste requirements, provided the bottom is a direct result of drilling fluids, produced water, and other waste associated with the exploration development, or production of crude oil, natural gas, or geothermal energy.

Tank bottoms shall not be removed from the tank and burned, and they shall not be dumped or spread on the ground without a permit from the Division of Waste Management. Tank bottoms shall not be taken to a landfill unless there are no free liquids and the waste meets requirements established by the landfill. Tank bottoms should be recycled as waste oil at an approved recycler or crude oil processor (See Appendix A for a list of approved landfills).

Regulations-401 KAR Chapter 30, 401 KAR 31:030, 47:030 and 401 47:150

Transfer of Well Ownership

Division of Oil and Gas

When a well is acquired by an operator, the well or wells shall be transferred to the successor and bonded. The original well operator is responsible for filing a WELL TRANSFER form identifying the well name; well number; county, permit number, the complete Carter Coordinate location and successor operator. *A separate form must be submitted for each lease.* A fee of \$25.00 is assessed for each well transferred. Payment may be submitted by a check made payable to *Kentucky State Treasurer*. In addition, the operator acquiring the well shall post a proper bond as described earlier in this manual.

Before the transfer will be completed, the selling and purchasing parties must submit the following:

Selling Party

- Well Log and Completion Report and any Electric Log, if run.
- Annual Report of Monthly Production for all wells listed under the operator's name. This report is required for each year an operator has producing or shut-in wells.
- Gathering Line Operator's License must be current
- As-Built Plat and/or Inclination Survey, if applicable
- Gathering Line and/or Flow Application must be approved, if applicable
- Topographic Map must be submitted and approved

Purchasing Party

- Bond to cover the well(s)
- Annual Report of Monthly Production for all wells listed under the operator's name. This report is required for each year an operator has producing or shut-in wells.
- Gathering Line Operator's License must be current
- No outstanding violations

Both parties must sign the Well Transfer form. If the purchasing party executes the Well Transfer form, the form must be sent via certified mail to the last known address of the selling operator. If the documents are returned to the purchasing party marked "undeliverable", all documents including the envelope is to be forwarded to the division for processing.

Transfer of a well with the Division of Oil and Gas does not relieve the operator from transferring the oil and gas facility associated with that well with the Division of Water.

Statute-KRS 353.590

Form-WELL TRANSFER (Form ED-13, See Appendix B)

Fee-\$25.00 per well

Transfer of Ownership/Operatorship of Oil and Gas Facility

Division of Water

The operator of the facility shall file an updated registration form when the following occurs:

- **Change in ownership/operatorship**
- **Change in the quantity of produced water**
- **Change in the treatment, storing, or disposing of produced water**

When a facility has a change of ownership/operatorship, a TRANSFER OF OWNERSHIP Form is to be submitted to the Division of Water. It is to be accompanied with an updated registration form completed by the new operator. The new operator must post a sign with his name, address, twenty-four (24) hour phone number and facility's registration number.

Transfer of an oil and gas facility with the Division of Water does not relieve the operator from transferring the well associated with the facility with the Division of Oil and Gas.

Regulation-401 KAR 5:090 Section 4
Statutes-KRS 151.125, 224.10-100 and 224.70-110
Form-TRANSFER OF OWNERSHIP (See Appendix B)

Holding Pits

Division of Water

When a pit is to be used for receiving and storing produced water, then a permit is required. The permit shall be obtained before construction begins. The application shall be submitted no less than thirty (30) days before the desired date of starting construction.

Holding pits are used for storing produced water. Holding pits are required to have:

- **An impermeable synthetic liner with a minimum thickness of twenty (20) ml to prevent the contamination of groundwater.**

- **A two foot continuous berm to divert surface drainage and prevent any discharge from the pit.**

- **A freeboard level of one foot to assure that no discharge will occur.**

No discharge from a holding pit is allowed, unless it has coverage under a Kentucky Pollutant Discharge Elimination System (KPDES) Permit.

A holding pit permit is valid for as long as the pit is used for the purpose it was intended. When a holding pit is no longer used for its intended purpose, it shall be backfilled, graded and revegetated. Upon written approval of the director, a holding pit may remain as a permanent structure or be used for other purposes.

Statute- KRS 151.125, 224.10-100 and 224.70-110

Regulation-401 KAR 5:090, Section 9

Form-APPLICATION FOR CONSTRUCTION AND OPERATION OF A PRODUCED WATER HOLDING PIT (See Appendix B)

Fee-\$100.00

Improperly Abandoned Wells - Temporary Abandonment Permits

Division of Oil and Gas

After a well is completed as a productive well, production shall be established within a reasonable time taking into account market conditions, pipeline access, weather, etc. If a well is not producing it shall be considered Improperly Abandoned. A non-productive well can be classified as Temporarily Abandoned (TA) after the Division inspector has evaluated the casing integrity, wellhead and conditions warranting the non-productive status. The operator shall complete a TEMPORARY ABANDONMENT PERMIT and submit to the Division of Oil and Gas with a copy of the WELL LOG AND COMPLETION REPORT which will be forwarded to the inspector for his evaluation. TA permits can be issued for up to a period of two years and can be renewed if the inspector thinks it is justified, but will require the operator to re-file the TA permit. Gas wells subjected to periodic shut-in periods due to market conditions are not considered Improperly Abandoned. Listed below are criteria Division inspectors will use to determine the length of a TA permit up to a maximum of two (2) years.

Reason for Well Being Shut-In	Length of TA (Up to 2 Yrs)
Oil Well-Running tubg/rods, replace pump, waiting on installation of flowline, tank battery construction	Maximum 6 months
Gas Well-Awaiting installation of gathering line.	Maximum 6 months.
Class II Injection Well with downhole problems or awaiting testing such as MIT	Maximum 1 Year
Market conditions (extended mandatory gas well shut-ins or dramatic drop in oil prices)	Maximum 1 Year
Shut-in Well is included on a Division-approved abatement schedule	Maximum 2 Years

NOTE: A Temporary Abandonment Permit will not be issued if an operator is avoiding plugging responsibilities.

Statute-KRS 353.550

Form-TEMPORARY ABANDONMENT PERMIT (Form ED-12, See Appendix B).

Time-T.A. may be issued for up to 2 years.

Testing Permits

Division of Oil and Gas

Abandoned wells that are currently in violation of improper abandonment and the bond (if bonded) has been forfeited by the Division of Oil and Gas may be investigated to determine if the well is potentially productive. A listing of abandoned wells in Kentucky can be found on the Kentucky Division of Oil and Gas website (<http://oilandgas.ky.gov>). To perform the investigation, an operator must file a TESTING PERMIT Application with the Division of Oil and Gas and submit a fee of twenty-five dollars (\$25.00). The applicant must also certify he has the authority to enter the property upon which the well is located to conduct well testing. The Testing Permit is valid for a period of sixty (60) days and allows the well operator to enter the well to perform open-flow tests, swab/bailer testing, running geophysical/electric logs for evaluation. The permit does not allow the applicant to perform the following:

- Drill additional footage.
- Perforate zones behind pipe.
- Sell crude oil retrieved from testing procedure.
- Salvage any production equipment (tubing/rods/pump) from abandoned well.

Upon completion of the testing procedure, the operator must file a REPORT OF INVESTIGATION to the Division detailing the testing and evaluation procedure. The operator must return the well to the original condition prior to testing or he may elect to operate, and properly bond the well. The applicant is advised to work closely with Division inspector and keep the inspector informed of all activities.

Statute-KRS 353.730

Form-WELL TESTING PERMIT (See Appendix B)

Form-REPORT OF INVESTIGATION (See Appendix B)

Time-60 Days

Fee: \$25.00 per well

Underground Injection (Class II) Wells

U. S. Environmental Protection Agency
and
Kentucky Division of Oil and Gas

The U.S. Environmental Protection Agency (USEPA), Region Four (IV), Groundwater/Underground Injection Control (UIC) Section in Atlanta, Georgia, regulates wells in which fluid is injected under pressure (Class II Wells) in Kentucky. A permit from the USEPA is required for Class II wells. Injection of fluids shall be done through a tubing and packer arrangement with the packer set immediately above the injection zone. A Mechanical Integrity Test (MIT) is required on the annulus between the tubing and production casing. The MIT requires pressure of at least three-hundred (300) lbs. applied on the annular space and monitored by pressure sensitive devices for at least thirty (30) minutes. A pressure variance not to exceed 9 lbs. above or below three-hundred (300) lbs. is acceptable during the 30 minute test period. For questions relating to UIC wells and to obtain regulations and forms, operators should contact the EPA at (404-347-3379).

Well operators shall file a CERTIFICATE OF COMPLETION FOR AN INJECTION WELL with the Division of Oil and Gas which contains information on the casing, tubing, type and depth of packer, injection pressure and reservoir information. This information is required to insure the protection of fresh water zones.

Regulation-805 KAR 1:020

Form-CERTIFICATE OF COMPLETION FOR AN INJECTION WEL (Form ED-23, See Appendix B)

Federal Agency-U.S. E.P.A

Regulations-40 CFR 124, 144, 146, and 147.

Form-U.I.C. PERMIT (EPA Form 7520-6, Contact USEPA, Region IV office)

Produced Water Disposal

Division of Water

Owner/operators of a facility having produced water are required to identify their method of disposal on the registration application form. The disposal of produced water shall be accomplished in a manner that will not contaminate the waters of the Commonwealth. The following are approved methods for disposing of produced water:

- **Injection into an approved, permitted or rule-authorized Class II underground injection well.**

- **Surface discharge covered under a Kentucky Pollutant Discharge Elimination System (KPDES) Permit.**

- **Transporting produced water off-site to a UIC Well.**

- **Using enhanced evaporation to evaporate produced water.**

In using the transport off-site method, the approval of the Division of Water's Director is required before doing so. There is no fee for receiving this approval. Operators seeking to use this method are to submit the APPLICATION TO DISPOSE OF PRODUCED WATER OFF-FACILITY form. This approval remains in effect, as long as the operator who received it continues to operate the facility in the manner they have filed with the Division of Water (DOW) or otherwise conditioned by the DOW.

If the produced water is considered to be hazardous material: For example, it could contain natural occurring radioactive material (N.O.R.M.). Then the carrier and their vehicle would need to be recognized by the Division of Motor Vehicle Enforcement, Department of Vehicle Regulation, Transportation Cabinet.

In using the surface discharge method, a KPDES permit is required for any discharge associated with the facility's operation. The owner/operator of the facility is required to have the KPDES permit in their name. This permit has a fee of \$2,100.00 and covers designated points of discharge for 5 years. The operator is required to take samples of the discharges, have a laboratory analyze the samples and submit discharge monitoring report forms to show compliance with the permit's limitations. A KPDES permit shall be obtained before any discharge from the facility's operation can occur. The forms needed to apply for this permit are KPDES Form 1 and Form C. These forms have several pages and were not included in this document, however, they may be obtained from the KPDES branch of the Division of Water at (502) 564-2225, Ext. 593.

A typical KPDES permit covering discharges of produced water would have the following effluent limitations:

<u>Effluent Characteristic</u>	<u>Monthly Avg.*</u>	<u>Daily Max.*</u>
Total Suspended Solids (TSS)	30 mg/1	60 mg/1
Oil and Grease	10 mg/1	15 mg/1
Chlorides	600 mg/1	1200 mg/1

***mg/1**=milligrams per liter

pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

The enhanced evaporation method involves heating the produced water to the point of evaporation. Facilities with small amounts of produced water may consider this option. With this method, there are no discharges from the facility and the produced water is evaporated on site. No permits or fees are required.

Regulation-401 KAR 5:090 Sections 5,6,8 and 11

Statutes-KRS 151.125, 224.10-100 and 224.70-110

Federal Regulation-49 CFR 100 thru 177

Fee-Dependent Upon Method of Disposal Chosen.

Form-Dependent Upon Method of Disposal APPLICATION TO DISPOSE OF PRODUCED WATER OFF-FACILITY, (See Appendix B)

Use of Vacuum for Enhanced Recovery

Division of Oil and Gas

The use of vacuum pumps increasing production from low-pressure or depleted reservoirs require the operator to notify, by registered mail, all well operators within one thousand (1,000) feet of the well in which the vacuum unit is to be installed. The operator shall file an APPLICATION FOR PERMIT FOR USE OF VACUUM with the Division for each lease.

Regulation-805 KAR 1:040

Statute-KRS 353.560

Form-APPLICATION FOR PERMIT USE OF VACUUM (Form ED-9, See Appendix B)

Hazardous Waste Generation Storage and Disposal

Division of Waste Management

Any well operator who generates waste is required to determine if the waste is hazardous. Waste from oil and gas production may be classified due to ignitability, corrosivity or toxicity for metals or organics. Hazardous waste generated by well operators may include but are not limited to:

- **Used antifreeze.**
- **Unused fracturing fluids or acids.**
- **Gas plant cooling tower cleaning waste (e.g. spent glycol).**
- **Painting waste.**
- **Liquid and solid waste generated by crude oil and tank bottom reclaimers.**
- **Used equipment lubricating oils.**
- **Waste compressor oil, filters and blowdown.**
- **Used hydraulic fluids.**
- **Waste solvents (e.g. used to clean equipment and equipment parts).**
- **Waste in transportation pipeline-related pits.**
- **Caustic or acid cleaners.**
- **Radioactive tracer wastes.**
- **Vacuum or compressor discharge lines.**

Operators of oil and gas wells are generally considered “conditionally exempt small quantity waste generators” because the amount of hazardous waste generated is less than two-hundred (220) lbs. per month (approximately half of a 55 gallon drum). This level of waste generators are not required to register with the Division of Waste Management but shall determine if waste is hazardous and shall store the waste in tanks or containers. Storage of hazardous waste at a well site may not exceed two-hundred (220) lbs. to maintain status at this level. This level of waste generators may dispose of hazardous waste at a permitted recycling facility or a solid waste landfill approved to accept this waste. If an operator mixes hazardous waste with non-hazardous drilling waste, the mixture is considered as hazardous and the operator shall determine if the mixture will exceed the two-hundred (220) lbs. for this level of waste generators.

Waste quantities ranging from 220 to 2,200 lbs. per month would classify the operator as a “small quantity generator” and operators exceeding 2,200 lbs. per month are considered “large quantity generators.” Small and large quantity generators must register with the Division of Waste Management and must comply with additional storage, transportation, disposal and reporting requirements that do not apply to limited quantity generators. To obtain forms to register as a generator, contact the Hazardous Waste Branch of the Division of Waste Management at (502) 564-6716.

To avoid being classified as a small or large quantity waste generator, the well operator should:

- **Substitute whenever possible less toxic materials and initiate best management practice in the site operations.**
- **Ensure the waste generated does not exceed 220 lbs. for any calendar month.**
- **Keep hazardous and non-hazardous material separate.**

Regulations-401 KAR Chapter 30, 401 KAR Chapter 31 and 401 KAR 32:010

Statute-KRS 224.46-510

Forms-DEP-7037 (For Hazardous Waste-Exceeding 220 lbs./month)

Fee-\$300 (For Hazardous Waste-Exceeding 220 lbs./month)

Groundwater Protection Plan

Division of Water

Activities with the potential to pollute groundwater are required to have a groundwater protection plan (GPP). Operators have the responsibility to identify those activities which pose a potential threat to groundwater and take steps to prevent the pollution of groundwater from those activities. A groundwater protection plan shall be prepared and implemented at each facility. The groundwater protection plan shall be submitted to the Division of Water, Groundwater Branch for review. If you have questions regarding this matter, contact the Groundwater Branch at (502) 564-3410.

Regulation: 401 KAR 5:037

Statutes: KRS 224.01-010, 224.10-100, 224.70-100 and 224.70-110

Reporting Spills, Bypasses and Leaks of Oil, Produced Fluids and Chemicals

Division of Waste Management

Division of Water

When a spill, leak or bypass occurs from a pipeline, drilling pit or container used for transporting or storing any substance that would result in soil contamination and/or contribute to the pollution of the Waters of the Commonwealth; the persons in charge of the activity shall immediately notify the Division of Water. The situation shall be reported immediately to the Environmental Response Team at (502) 564-2380 or 1-800-928-2380. The following information will be asked:

- **The responsible party.**
- **Location and point of discharge.**
- **The nature of the material discharged.**
- **Estimate the quantity of the material discharged.**
- **Estimate of probable environmental impact.**

The waters of the Commonwealth means and includes all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth.

For any spill or release of oil that occurs on the soil, the well operator shall report any release or spill of crude oil when the amount exceeds twenty-five (25) gallons during a 24-hour period. Such releases of petroleum based products should be reported immediately to the Environmental Response Team at the number previously listed.

Even if the release is contained on soil; cleanup is required. When a release of oil, produced fluids, or chemicals occurs into the environment; groundwater can be contaminated and the ground can become unsafe for children and wildlife. The responsible party must determine the full extent of the release's effect upon the environment, take steps to correct that effect and prevent any additional effect. Any release or spill which causes or has the potential of causing a sheen on the Waters of the Commonwealth is in violation of the Clean Water Act, Section 311. Spills, leaks or bypasses contained within the spill prevention, control and countermeasure (SPCC) of a facility need to be reported and cleaned up. These events have the potential to impact groundwater and storm water runoff. Spills, releases or bypasses left in the SPCC can permeate (penetrate) into the soil contaminate groundwater and storm water. Requirements of SPCC Plans are discussed in further detail in this manual. All spills, bypasses and/or releases shall be remediated.

Regulations-401 KAR 5:090 Section 13 and 401 KAR 5:015

Statutes-KRS 151.125, 224.10-100 and 224.70-110, 224.01-400(11), 224.01-400 (18 to 21) and 224.01-405

Cleanup of Oil, Produced Fluids and Chemical Spills

Division of Waste Management

Division of Water

Any petroleum or chemicals spilled or otherwise released onto soils or into waters must be immediately cleaned up. Steps in this process include:

- **Determine the extent of the release and its effect on the environment.**
- **Correct the effect of the release on the environment.**

Characterization will generally include a thorough sampling of soils, surface water and groundwater. Information gathered in these steps are then used to select one of the following options available for corrective action:

- **Demonstrate that no action is necessary to protect human health, safety, and the environment.**
- **Manage the release in a manner that controls and minimizes the harmful effects of the release and protects human health, safety, and the environment.**
- **Restore the environment through the removal of the hazardous substance.**
- **Any of the above combinations.**

This can be accomplished in accordance with the following options: digging up contaminated soils and hauling such soils to an approved landfill, treating contaminated soils in a manner approved by the Division of Waste Management, closing the site in accordance with risk-based procedures, closing the site as a residual landfill, or by implementing other options permissive under the appropriate statute. If the release exceeds a reportable quantity (see previous section), the cleanup must be conducted under the supervision of the Division of Water or the Division of Waste Management. If the release is below a reportable quantity, the contamination must still be removed or otherwise cleaned up, but these activities usually will not need to be supervised by either division. Failure to clean up a release, even if the release was less than a reportable quantity, can subject the operator to fines and possible imprisonment. Contact the appropriate Division of Water or Division of Waste Management field office for additional information on cleanups.

Statutes-KRS 224.01-400 and 224.01-405

N.O.R.M.

Cabinet for Human Resources-Radiation Branch

Naturally Occurring Radioactive Material (N.O.R.M.) is formed when reservoir production fluids (oil and water) combine with secondary recovery fluid, downhole temperature and pressure to dissolve radioactive radium or radon within the producing formation. The radioactive material attaches to production equipment (tubing, casing, inside separators and storage tanks) in the form of scale. It is suggested that at the time of plugging a well, the equipment be scanned for N.O.R.M. with an appropriate scanning device. For more information regarding scanning, monitoring or disposal, contact the Radiation Branch at (502) 564-3700. The Division of Oil and Gas inspection staff is assigned Micro-R meters and routinely scan production tubing and sucker rods when plugging wells under the “state-bid” plugging program for N.O.R.M. contamination (double background radiation).

Filing of Annual Oil and Gas Production

Division of Oil and Gas

Oil and natural gas annual production information shall be supplied to the Division of Oil and Gas on or before April 15th for the previous year’s production.

For gas or combination oil and gas wells, the following well information is required:

- **Permit Number**
- **Purchaser Number (assigned by purchasing company)**
- **Lease Name**
- **Producing Formation (if more than one, list as “Commingled” and list all producing zones)**
- **Produced Gas (gas measured at wellhead or pro-rated based on pick-ups or open flow tests)**
- **Net Gas Sales (actual gas sold, may be different from produced gas due to line loss or compressor usage)**
- **Gas Well Status (producing or shut-In).**

Crude oil production can be reported by individual well or lease basis. When reporting oil production by lease, the purchaser lease number used by the oil purchaser shall be included. A listing of permit numbers for wells on each lease shall be attached to the form making reference to the purchaser lease number.

Regulation 805 KAR 1:180 (New Regulation)

Statute-KRS 353.205 and 355.550

Form-ANNUAL REPORT OF MONTHLY PRODUCTION (Form ED-17, See Appendix B)

Underground Mining Activity Near an Oil/Gas Well

Office of Mine Safety and Licensing

Underground mining activity within three-hundred (300) feet of a producing or plugged well requires the mining company to identify the well location, permit number and operator on an APPLICATION TO MINE WITHIN 300 FEET OF AN OIL OR GAS WELL and submit to the Office of Mine Safety and Licensing. The mining company also sends a copy of Form OG-500 to the well operator. Upon receipt, the well operator may file an objection with the Office of Mine Safety and Licensing within fifteen (15) days if, in the well operator's opinion, mining activity will adversely affect wellbore integrity.

Statute-KRS 352.510

Form-APPLICATION TO MINE WITHIN 300 FEET OF AN OIL OR GAS WELL (Form OG-500, See Appendix B)

Farm Tap Service

Public Service Commission

The operator of a gas pipeline company is required to provide service (farm tap) to a person who owns property on which the company's gas well or gas gathering pipeline is located, or to a person whose property and point of desired service is located within one-half (1/2) air mile of the gas pipeline company's gas well or gas gathering pipeline. The company is responsible for providing the meter and service tap, including saddle and first shutoff valve. The prospective customer (applicant) must provide all other equipment and material required for service.

In Appendix A, the type of information the company must provide the applicant, specifies the installation methods and materials required. Prior to the company initiating service, the Public Service Commission shall cause the tap and applicant's service line to be inspected. If the company charges a rate for gas service, it shall have a tariff on file with the Public Service Commission.

In providing farm tap service, the P.S.C. does not require the gas producer or gas pipeline company to maintain a fixed or specific gas pressure; nor is the gas pipeline company restricted from abandoning any gas well or gas gathering pipeline.

Regulation-807 KAR 5:026

Statute-KRS 278.485

Gas Production or Gas Gathering Pipelines

Public Service Commission

The Public Service Commission does not assert jurisdiction over gas production or gas gathering pipelines. However, if a gathering pipeline is located in a Class 3 location (area with 46 or more buildings or area where building is within one-hundred (100) yards of pipeline - See Glossary for more complete definition), it is subjected to the Public Service Commission's safety regulations. A gathering pipeline is defined as a pipeline that transports gas from a current production facility to a transmission line or main, gathering lines are regulated by the Division of Oil & Gas.

Regulations-807 KAR 5:022 Sec. 1(3) and Sec. 1(1)(f)
Statute-KRS 278.010(3) (b) and (c)

Quality of Gas

Public Service Commission

The Public Service Commission requires that all gas supplied to customers contain no more than:

- **A trace of hydrogen sulfide**
- **Thirty grams of total sulphur per 100 cubic feet; or**
- **Five grams of ammonia per 100 cubic feet.**

Each utility must also establish and maintain a standard heating value (BTU content) for its gas, which shall be included in the utilities tariff on file with the Public Service Commission. Utilities should consult Regulation 807 KAR 5:022, Section 15 and 16 for additional requirements regarding the purity and BTU content of its gas. Utilities and gas pipeline companies serving customers under Statute 278.485 are exempt from these requirements.

Regulation 807 KAR 5:022 Sec. 1(2)(a); 15; and 16

Gas Storage

Public Service Commission

The Public Service Commission regulates the aboveground facilities of a gas storage operation which are used to inject or withdraw gas. Such facilities include, but are not limited to: meters, regulators and related facilities for measuring the amount of gas and regulating its pressure; and the design, construction and operation of pipelines used to deliver gas to and from storage. Depending upon their location and use, gathering pipelines connected to a gas storage operation may be exempt from the Public Service Commission's authority.

A person who wishes to operate a gas storage operation must receive prior approval from the Public Service Commission before constructing and operating aboveground facilities, including pipelines, for a gas storage operation. The operator should include in the filing with the Public Service Commission the relevant information pertaining to the storage field itself required by the Department of Mines and Minerals, Division of Oil & Gas.

Regulation-807 KAR 5:022, Sec. 1(1)(a) (1)(5)

Statute-KRS 278.010 (3)(b) and (c), 278.504

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IV. ABANDONMENT AND CLOSURE

Plugging of Wells

Division of Oil and Gas

The Division of Oil and Gas regulates plugging of all wells in Kentucky. Before plugging operations begin, the well operator shall contact the oil and gas inspector to obtain plugging instructions and establish a time and date for plugging. The well operator shall provide the inspector with a record of the formations (driller's log), depths of all casing, depths of coal seams and fresh/saline water zones. If the well penetrates a mineable coal seam, the operator shall notify, by registered mail, operators of the coal seam of intention to plug and abandon at least five (5) days prior to plugging. The operator shall use a dump bailer or pump through tubing for placing cement in the well. Important intervals which shall be isolated with minimum cement plugs are listed below:

- **Coal Seams: Cement plug to extend from 40 ft. below deepest workable seam to the surface.**
- **Fresh Water Zones: Cement plug to extend at least fifteen (15) ft. below zone to surface.**
- **Producing Formation(s): Cement plug at least fifteen (15) ft. in length placed above each producing zone or perforated interval.**
- **“Shot” Intervals: Cement plug shall be set in a stable portion of wellbore at least twenty (20) ft. above top of shot zone.**

The wellhead shall be cut off below ground level for cultivation unless conditions are such that there is a need for a permanent monument or vent pipe which should be subject to the approval of the Division. Within thirty (30) days after plugging, the well operator shall file a PLUGGING AFFIDAVIT with the Division documenting the plugging procedure. If the well is to be used as domestic water well by the landowner, the well will be plugged up to a point below the fresh water zone. The landowner shall file a letter with the Division requesting the use of the well for domestic water supply. The landowner shall also file with the Division of Water a completion report filled out by a certified water well driller. The Division of Oil and Gas shall not release the bond until the Division of Water has accepted the certified completion report.

Regulations-805 KAR 1:060 Wells Not Drilled through Coal Seams.

805 KAR 1:070 Wells Drilled through Coal Seams.

Statute-KRS 353.560, 353.120

Form-PLUGGING AFFIDAVIT (Form ED-38, See Appendix B)

Site Closure

Division of Waste Management
Division of Water

Abandonment of a facility is not an acceptable closure method. A facility is defined to be any well, tank, pit, structure, equipment or improvement used in the exploration, drilling, or production of oil or gas and used for treating, storing, or disposing of produced water. A tank battery and its associated wells, pits and other associated structures represent one facility. The owner/operator shall close the facility by doing the following:

- **Plug the well(s) in accordance with the Division of Oil and Gas.**
- **Dispose of produced fluids in a manner approved by the Division of Water. (See the section entitled Produced Water Disposal).**
- **Dispose of tank bottom sediments by solidifying and hauling to a permitted landfill or by taking to a recycler. For regulated underground storage tanks (UST), closure must be done in accordance with UST regulations.**
- **Remove above and underground tanks.**
- **Remove or purge all gathering lines/flowlines associated with the facility in accordance with the Division of Oil and Gas regulation 805 KAR 1:190.**
- **Remove all wastes and contaminated soils in a manner approved by the Division of Waste Management (See section on Clean-up of Oil, Produced Water and Chemical Spills).**
- **Backfill the pits with clean material.**
- **Reclaim the area to prevent soil erosion.**

Facilities registered with the Division of Water will be considered active until the following additional items are completed:

- **Submission of copies of well plugging affidavits to the Division of Water.**
- **Site inspection for closure by Division of Water.**

Regulation-401 KAR 5:090, Section 4, 401 KAR Chapter 30-48

Statutes-KRS 151.125, 224.01-400, 224.01-405, 224.10-100, 224.40-100, 224.40-305, 224.60-135 and 224.70-110

Well Site Reclamation on Severed Mineral Tracts

Division of Oil and Gas

Well site reclamation is required on all severed mineral leases after the well has been properly plugged and shall be performed in accordance with the plan submitted at the time of permit application. (Refer to the section on Pre-drilling, entitled Well Permits on Severed Mineral Tracts for details in requirements of a restoration plan). An inspector will make an on-site inspection of the reclaimed location approximately one (1) year after the area is restored to allow ample time for vegetation to be established. If no problems are observed, the operator's bond for the well will be released after the inspector files his report with the Division.

Regulation-805 KAR 1:170 (New Regulation)

Statutes-KRS 353.5901 and 353.590 Section 5

Form-PLAN TO PREVENT EROSION OF AND SEDIMENTATION FROM A WELL SITE (Form ED-10, See Appendix B).

Bond Release

Division of Oil and Gas

Bonds can only be released upon receipt of a written request from the operator or from the insurance company. A bond shall be released after the well has been properly plugged or the well has been transferred and bonded by a successor operator.

If the well has been plugged, the operator will be required to submit a Plugging Affidavit, Well Log and Completion Report and electric logs, if run, to the Division of Oil and Gas. In addition, the following items must be on file:

- Annual Report of Monthly Production for all wells listed under the operator's name. This report is required for each year an operator has producing or shut-in wells.
- Gathering Line Operator's License must be current
- As-Built Plat and/or Inclination Survey, if applicable
- Gathering Line and/or Flow Application must be approved, if applicable
- Topographic Map must be submitted and approved
- If the minerals were severed, a letter stating the well site has been reclaimed according to the Plan to Prevent Erosion of and Sedimentation from a Well Site (ED-10) form.

Regulation-805 KAR 1:050
Statute-KRS 353.590(5)

Bond Forfeitures

Division of Oil and Gas

A bond may be forfeited by the Division of Oil and Gas for any violation of oil and gas statutes or regulations.

The Division of Oil and Gas will send a Notice of Violation via certified mail to the operator of record. If the operator does not correct the violation within the allotted timeframe, bond forfeiture proceedings may begin. Written requests for extensions to correct violations may be considered if they are received before the allotted timeframe period expires.

When the Division of Oil and Gas determines a bond must be forfeited, an Order of Forfeiture will be mailed to the operator and the surety company, if applicable. Should the operator or the surety company disagree with the order of forfeiture, both parties have the right to bring an action for review in the local circuit court or the Franklin County Circuit Court within thirty (30) days from the date the Order of Forfeiture was issued. Failure to file a request for review shall result in the Order of Forfeiture becoming final and non-appealable. Once the thirty (30) days have lapsed, the Division of Oil and Gas will take the necessary steps to obtain the bond money from the appropriate bond surety company, bank or other financial institution.

Statute-KRS 353.590(7)

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V. INSPECTION AND ENFORCEMENT
Division of Oil and Gas Inspection-Enforcement Authority
Division of Oil and Gas

The Division of Oil and Gas inspectors have the authority to inspect any well site and associated gathering lines/flowlines at any time. If a violation is observed, the operator will be notified by certified mail of the type of violation and corresponding statute. The operator will then have forty-five (45) days to contact the inspector and correct the violation. If the operator fails to correct the violation, the Division may forfeit the operator's bond. Operators should maintain a current address with the Division at all times. Failure to maintain a current address will not allow for an extension of time to correct a violation.

Civil penalties, which include imprisonment and fines assessed by the Circuit Court of the county in which the violation occurs, may also be assessed against anyone who violates provisions of statutes relating to drilling, operation and plugging of oil and gas wells. A list of commonly cited violations can be found in Appendix A.

Statute-KRS 353.200, 353.990, 353.991 and 353.992

Division of Water and Division of Waste Management
Inspection-Enforcement Authority
Division of Water & Division of Waste Management

The agencies of the Department of Environmental Protection may inspect any oil and gas facility and shall provide written notification of any violation to the operator. Following the findings of any violation, the Cabinet may start enforcement action to bring the condition or activity into compliance, and any other applicable remedy including civil penalties. Civil penalties include fines up to \$25,000.00 per day per violation and imprisonment for up to five (5) years.

Regulations-401 KAR 5:090 Section 12 and 401 KAR Chapter 40
Statutes-KRS 224.10-100, 224.10-410 and 224.99-010

Kentucky Public Service Commission
Enforcement Authority

The Public Service Commission is provided with the authority to assess penalties on a utility, or any officer, agent or employee of a utility, when any provision of applicable statutes or regulation established pursuant to KRS Chapter 278 are willfully violated. Penalties against an individual shall not exceed \$2500 for each offense, or criminal penalty of imprisonment for no more than 6 months, or both. A utility is subject to penalties no less than \$25.00 or more than \$2500.00 for each offense.

Authority is granted to assess a penalty not to exceed \$10,000 on any person for each violation of the Commission's regulations governing the safety of pipeline facilities or the transportation of gas, as these terms are defined in the Natural Gas Pipeline Safety Act of 1968.

Statutes-KRS 278.990 and KRS 278.992

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GLOSSARY OF TERMS

Abandoned well: A well or hole which has never been used, or which in the opinion of the Division of Oil and Gas, will no longer be used for the production of oil or gas or for the injection or disposal of fluid.

Barrel: Forty-two (42) U.S. gallons.

Class II Wells: Wells which inject fluids: (A) Which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection. (B) For enhanced recovery of oil or natural gas. (C) For storage of hydrocarbons which are liquid at standard temperature and pressure.

Correlative Rights: The reasonable opportunity of each person entitled thereto to recover and receive without waste the oil and gas in and under his tract or tracts, or the equivalent thereof.

Deep Well: Any well drilled and completed below the depth as defined as a shallow well. See definition of Shallow Well.

Drilling Pit: An earthen excavation for the collection of fluids associated with the drilling, construction, completion, acidizing, or fracturing of an oil or gas well.

Dry Gas: A gas well producing one (1) barrel or less of produced water at maximum production conditions during a given twenty-four (24) hour period.

Farm Tap Service: Natural gas consumption by a property owner located within one-half mile of a well or gas gathering pipeline.

Gas: All natural gas, including casing head gas, and all other hydrocarbons not defined as "oil."

Gathering line: Means any pipeline that is installed or used for the purpose of transporting crude oil or natural gas from a well or production facility to the point of interconnection with another gathering line, an existing storage facility or a transmission or main line, including all lines between interconnections, except those lines or portions thereof subject to the exclusive jurisdiction of the United States Department of Transportation under 49 C.F.R. Parts 191, 192, 194 and 195.

Facility: Any well, tank, pit, structure, appurtenance or improvement used in the exploration, drilling, or production of oil or gas or used in the exploration, drilling, or production of oil or gas or used for treating, storing or disposing of produced water.

Field: The general area which is underlaid or appears to be underlaid by at least one (1) pool; and "field" includes the underground reservoir containing oil or gas or both. "Field" and "pool" mean the same thing when only one (1) underground reservoir is involved; however, "field," unlike "pool," may relate to two (2) or more pools

Management Plan: The individual plan adopted by the Natural Resources and Environmental Protection Cabinet as the official document guiding the management, public use, and protection of an area designated under the Wild Rivers System.

Hazardous Waste: A waste designated as hazardous under 401 KAR Chapter 31.

Holding Pit: An earthen excavated depression designed to receive and store produced water at a facility.

Kentucky Pollutant: Discharge Elimination System (KPDES): The Kentucky program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits to discharge and imposing and enforcing pretreatment requirements. The KPDES regulations are 401 KAR 5:050 to 5:080.

Oil: Natural crude oil or petroleum and other hydrocarbons, regardless of gravity, which are produced at the well in liquid form by ordinary production methods and which are not the result of condensation of gas after it leaves the underground reservoir.

Oil production flow line: Is defined as a gathering line running from a well or wells to a tank battery for production treatment and storage; or in the case of an injection well, the line from the tank battery to the well.

Operator: Any owner of the right to develop, operate and produce oil and gas from a pool and to appropriate the oil and gas produced therefrom, either for himself or for himself and others; in the event that there is no oil and gas lease in existence with respect to the tract in question, the owner of the oil and gas rights therein shall be considered as “operator” to the extent of seven-eighths (7/8) of the oil and gas in that position of the pool underlying the tract owned by such owner, and as “royalty owner” as to one-eighth (1/8) interest in such oil and gas; and in the event the oil is owned separately from the gas, the owner of the right to develop, operate, and produce the substance being produced or sought to be produced from the pool shall be considered as “operator” as to such pool. Operator also refers to any person who operates an oil & gas facility.

Person: An individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, federal agency, state agency, city, commission, political subdivision of the Commonwealth, or any interstate body.

Produced Water: Any water and pollutants and any combination thereof resulting, obtained, or produced from the exploration, drilling, or production of oil or gas.

Pollutant: Dredged spoil, solid waste, incinerator residue, sewage sludge, garbage, chemical, biological or radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, industrial, municipal or agricultural waste, and any substance resulting from the development, processing, or recovery of any natural resource which may be discharged into water.

Pool: An underground reservoir containing a common accumulation of oil or gas or both. Each productive zone of a general structure is completely separated from any other zone in the structure.

Register: To file forms with the appropriate agency, in some cases agencies, which contains information such as: to oil and gas well geographic location, name of lease on which well(s) are located, production, produced water production, methods used for treating, storing, or disposing of produced water, and any other information deemed necessary by that agency.

Shallow well: Any well drilled and completed at a depth less than four thousand (4,000) feet except, in the case of any well drilled and completed east of longitude line 84 degrees and 30 minutes (84° 30’); shallow well means any well drilled and completed at a depth less than four thousand (4,000) feet or

above the base of the lowest member of the Devonian Brown Shale (Olentangy Shale, commonly referred to as White Slate), whichever is the deeper in depth.

Solid Waste: A waste that is not a hazardous waste or a special waste.

Special Waste: A waste designated as special under KRS 224.50-760, including gas and oil drilling muds and oil production brines.

Stripper Well: Any well producing ten (10) barrels or less per day of oil.

Tank Battery: An installation where oil is collected from wellheads and separated from produced water.

Underground Injection: The subsurface emplacement of fluids by well injection but does not include the underground injection of natural gas for storage purposes.

Utility: A gas utility is any person except a city, who owns, controls or operates any facility for the production, manufacture, storage, distribution, sale, or furnishing of natural or manufactured gas, to or for the public for compensation; or the transporting or conveying of gas, crude oil or other fluid substance by pipeline to or for the public for compensation.

Water or Waters of the Commonwealth: Includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction.

Well: A borehole drilled, or proposed to be drilled, for the purpose of producing natural gas or petroleum, or one through which natural gas or petroleum is being produced, or a borehole drilled or proposed to be drilled for the purpose of injecting any water, gas, or other fluid therein or one into which any water, gas, or other fluid is being produced.

Workable or Mineable Coal Seam: A coal bed being operated commercially, a coal bed that the Department of Mines & Minerals decides can be operated commercially and the operation of which can reasonably be expected to commence within not more than ten (10) years, or a coal bed which, from outcrop indications or other definite evidence, proves to the satisfaction of the Commissioner of the Department of Mines & Minerals to be workable, and which, when operated, will require protection if wells are drilled through it.

KENTUCKY REGULATORY OFFICES

DEPARTMENT OF MINES & MINERALS
DIVISION OF OIL AND GAS
1025 Capital Center Drive
P. O. Box 2244
Frankfort, KY 40601
(502) 573-0147

PUBLIC SERVICE COMMISSION
730 Schenkel Lane
P. O. Box 615
Frankfort, KY 40601
(502) 564-3940

DEPT OF HOUSING, BUILDINGS & CONST.
DIVISION OF HOUSING PROTECTION
STATE FIRE MARSHAL'S OFFICE
1047 US 127 South, Suite 1
Frankfort, KY 40601
(502) 564-3626

DEPARTMENT FOR HEALTH SERVICES
RADIATION BRANCH
275 East Main
Frankfort, KY 40601
(502) 564-3970

KENTUCKY GEOLOGICAL SURVEY
UNIVERSITY OF KENTUCKY
228 Mining and Minerals Resources Building
Lexington, KY 40506-0107
(606) 257-5500

DEPT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 Reilly Road
Frankfort, KY 40601
(502) 564-3410
Emergency Response (800) 928-2380

DEPT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
14 Reilly Road
Frankfort, KY 40601
(502) 564-6716

DEPT FOR ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
830 Schenkel Lane
Frankfort, KY 40601
(502) 573-3382

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF FORESTRY
627 Comanche Trail
Frankfort, KY 40601
(502) 564-4496

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF ENERGY
663 Teton Trail
Frankfort, KY 40601
(502) 564-7192

DISASTER AND EMERGENCY SERVICES
State EOC Bldg., Boone Center
Frankfort, KY 40601
(502) 654-8682

FEDERAL REGULATORY OFFICES

ENVIRONMENTAL PROTECTION AGENCY - REGION IV OFFICE
Water Management Division Groundwater/Drinking Water Branch
Groundwater & UIC Section
61 Forsyth Street
Atlanta, GA 30303-3104
(404) 562-9461

U.S. DEPARTMENT OF ENERGY
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-5600

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Jackson District Office
411 Briarwood Drive
Suite 404
Jackson, MS 39206
(601) 977-5402

U. S. ARMY CORPS OF ENGINEERS-DISTRICT OFFICES

MEMPHIS DISTRICT
B-202 Clifford Davis Federal Building
167 N. Main
Memphis, TN 38103-1894
(901) 544-3471
Fax (901) 544-3266

HUNTINGTON DISTRICT
502 8th Street
P. O. Box 212
Huntington, WV 25701-2070
(304) 529-5210
Fax (304) 529-5085

NASHVILLE DISTRICT
P. O. Box 1070
Nashville, TN 37202
(615) 736-5181
Fax (615) 736-7145

LOUISVILLE DISTRICT
Regulatory Branch
P.O. Box 59
Louisville, KY 40201
(502)-582-5452
Fax: (502-)582-5072

KENTUCKY DIVISION OF OIL AND GAS CONSERVATION
INSPECTOR INFORMATION/COUNTY ASSIGNMENTS

PIKEVILLE DISTRICT

Richard McCown

P.O. Box 63
Hueysville, KY 41640
Home: 606-312-7127
Cell: 606-226-4030 (791-4441)
COUNTIES: Menifee, Wolfe, Morgan
Johnson, Lawrence, Boyd, Greenup, Elliott
Carter

James Goble

48 Peach Street
Ivel, KY 41642
Home: 606-874-9531
Cell: 606-312-7126
Office: 606-433-7742
COUNTIES: Floyd, Knott, Pike, Martin

BARBOURVILLE DISTRICT

Jerry Finley-Supervisor

P. O. Box 1318
London, KY 40743
Home: 606-878-7559
Cell: 606-521-1734
Office: 606-546-5035
Fax: 606-545-9704
COUNTIES: Bell, Knox, Laurel, Whitley

Kerry Morgan

1373 John Morgan Memorial Road
Essie, KY 40827
Home: 606-374-4688
Cell: 606-521-2183
COUNTIES: Clay, Perry, Harlan, Leslie
Letcher

Justin Turner

P.O. Box 531
Jackson, KY 41339
Home: 606-568-7809
Cell: 606-312-7128
COUNTIES: Breathitt, Lee, Magoffin Owsley

FRANKFORT DISTRICT

Marvin Combs -Assistant Director (Pikeville Acting Supervisor)

P.O. Box 2244 Frankfort, KY. 40602 (Office-502-573-0147) (Cell-606-454-6046)
COUNTIES: Bath, Boone, Kenton, Campbell, Bracken, Pendleton, Grant, Owen, Henry, Gallatin,
Carroll, Trimble, Oldham, Jefferson, Bullitt, Spencer, Shelby, Anderson, Franklin, Nelson, Scott,
Woodford, Jessamine, Fayette, Bourbon, Nicholas, Harrison, Clark, Montgomery, Rowan, Fleming,
Lewis, Mason, Robertson, Washington, Mercer, Marion, Boyle

Marvin Smith

602 Woodview Drive
Somerset, KY 42503
Home: 606-677-0607
Cell: 606-219-3321
COUNTIES: Lincoln, Garrard, Madison, Estill, Pulaski, Rockcastle, Jackson, Powell

KENTUCKY DIVISION OF OIL AND GAS CONSERVATION
INSPECTOR INFORMATION/COUNTY ASSIGNMENTS

GLASGOW DISTRICT

Ron Norris-Supervisor
61 Whitetail Court
Glasgow, KY 42141
Home: 270-678-1824
Cell: 270-670-6774
Office: 270-651-1562
Fax: 270-651-5983
COUNTIES: Barren, Metcalfe

Greg Welsh
171 Duff Lane
Beaver Dam, KY 42141
Home: 270-274-0605
Cell: 270-871-4336
COUNTIES: Meade, Breckinridge, Ohio
Butler, Grayson

Seth Parrish
P.O. Box 52
Albany, KY 42602
Home: 606-387-0377
Cell: 606-688-2115
COUNTIES: Clinton, Cumberland
Monroe

Justin Watt
998 Little Knob Rd.
Smiths Grove, KY 42171
Home: 606-312-7129
COUNTIES: Warren, Simpson, Allen
Edmonson, Logan, Todd

Matthew Adkins
207 Huddleston Rd.
Monticello, KY 42633
Home: 606-312-7130
COUNTIES: McCreary, Wayne, Casey
Russell

Brian Yager
186 Winding Ridge Rd.
Greensburg, KY 42743
Cell: 606-312-7131
COUNTIES: Adair, Green, Taylor, Larue,
Hart, Hardin

MADISONVILLE DISTRICT

Cy Britt-Supervisor
625 Hospital Drive
Madisonville, KY 42431

Cell: 270-871-8465 (952-1219)
Office: 270-824-7523
Fax: 270-824-7526

COUNTIES: Caldwell, Lyon, Trigg
Livingston, Marshall, Calloway,
Graves, McCracken, Ballard, Carlisle
Hickman, Fulton, Crittenden, Hopkins,
Christian, Muhlenberg

Bert Combs
P.O. Box 51
Slaughters, KY 42456
Home: 270-884-3761
Cell: 270-871-4316
COUNTIES: Webster, Union, Henderson
McLean

Stephen Sloan
201 Keystone Court, Apt. 2
Owensboro, KY 42301
Cell: 270-302-4888
COUNTIES: Daviess, Hancock

Bowling Green Regional Office #002
 2642 Russellville Rd.
 Bowling Green, Kentucky 42101
 (270) 746-7475 Fax (270) 746-7865
 Attn: Bill Baker
 Allen Grayson Simpson
 Barren Hart Warren
 Butler Logan
 Edmonson Ohio

London Regional Office #007
 875 South Main Street
 London, Kentucky 40741
 (606) 330-2080 Fax (606)330-2097
 Attn: Robert Miller
 Bell Knox Owsley
 Clay Laurel Rockcastle
 Harlan Leslie Whitley
 Jackson McCreary

Columbia Regional Office #003
 2751 Campbellsville Rd.
 Columbia, Kentucky 42728
 (270) 384-4734 Fax (270) 384-5199
 Attn: Brian Crump

Louisville Regional Office #009
 9116 Leesgate Road
 Louisville, Kentucky 40222-5084
 (502) 429-7122 Fax (502) 429-7125
 Attn: Charlie Roth

Adair LaRue Pulaski
 Boyle Lincoln Russell
 Casey Marion Taylor
 Clinton Metcalfe Washington
 Cumberland Monroe Wayne
 Green Nelson

Breckinridge Meade
 Bullitt Oldham
 Hardin Shelby
 Jefferson Spencer

Florence Regional Office #005
 8020 Veterans Memorial Drive, Suite 110
 Florence, Kentucky 41042
 (859) 525-4923 Fax (859) 525-4157
 Attn: Todd Giles

Madisonville Regional Office #011
 Madisonville State Office Building
 625 Hospital Drive
 Madisonville, Kentucky 42431-1683
 (270) 824-7529 Fax (270) 824-7070
 Attn: Randy Thomas

Boone Gallatin Owen
 Bracken Grant Pendleton
 Campbell Henry Trimble
 Carroll Kenton

Caldwell Hancock Muhlenberg
 Christian Henderson Todd
 Crittenden Hopkins Union
 McLean Webster

Frankfort Regional Office
 200 Fair Oaks Lane, 3rd Floor
 Frankfort, Kentucky 40601
 (502) 564-3358 Fax (502) 564-5043
 Attn: Robert Daniell

Morehead Regional Office #013
 525 Hecks Plaza Drive
 Morehead, Kentucky 40351
 (606) 783-8655 Fax (606) 783-8659
 Attn: Danny Fraley

Anderson Franklin Mercer
 Bourbon Garrard Nicholas
 Clark Harrison Powell
 Estill Jessamine Scott
 Fayette Madison Woodford

Bath Fleming Mason
 Boyd Greenup Menifee
 Carter Lawrence Morgan
 Elliott Lewis Rowan
 Montgomery Robertson

Hazard Regional Office #006
 233 Birch Street, Suite 1
 Hazard, Kentucky 41701
 (606) 435-6022 Fax (606) 435-6025
 Attn: Damon White

Paducah Regional Office #015
 130 Eagle Nest Dr.
 Paducah, Kentucky 42003
 (270) 898-8468 Fax (270) 898-8640
 Attn: Shannon McLeary, Supervisor

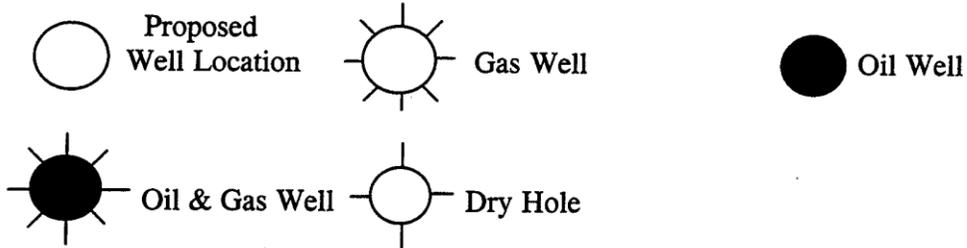
Breathitt Knott Magoffin Pike
 Floyd Lee Martin Wolfe
 Johnson Letcher Perry

Ballard Fulton Livingston McCracken
 Calloway Graves Lyon Trigg
 Carlisle Hickman Marshall

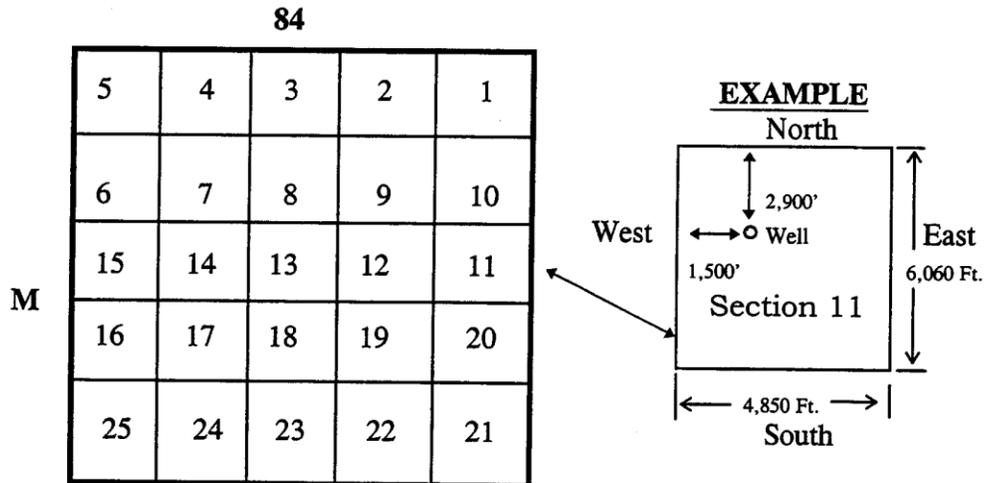
KENTUCKY WILD RIVERS

River and Date Designated	County	Length (miles)	Corridor Acreage	Endpoints (Landmarks and River Miles)	Drainage Basin
Bad Branch 1986	Letcher	4.0	1,325	Headwaters to KY 932	Cumberland
Big South Fork Cumberland River 1972	McCreary	10.2	2,450	TN State Line to Blue Heron (Mile 55.2 to Mile 45.0)	Cumberland
Cumberland River 1972	McCreary Whitley	16.1	3,300	Summer Shoals to Lake Cumberland (Mile 574.6 to Mile 558.5)	Cumberland
Green River 1972	Edmonson Hart	26.0	6,500	East Boundary of Mammoth Cave National Park to Lock and Dam No. 6 at Brownsville (Mile 207.7 to Mile 181.7)	Green
Little South Fork Cumberland River 1974	McCreary Wayne	10.4	1,400	KY 92 to Lake Cumberland (Mile 14.5 to Mile 4.1)	Cumberland
Martins Fork 1974	Harlan	3.9	680	Boundary of Cumberland Gap National Historic Park to KY 987 (Mile 31.3 to Mile 27.4)	Cumberland
Red River 1972	Wolfe Menifee	9.1	1,025	KY 746 to Swift Camp Creek (Mile 68.6 to Mile 59.5)	Kentucky
Rock Creek 1974	McCreary	18.0	6,150	TN State Line to White Oak Cr. (Mile 21.9 to Mile 3.9)	Cumberland
Rockcastle River 1972	Rockcastle Laurel Pulaski	15.9	3,350	KY 1956 at Billows to Lake Cumberland	Cumberland
TOTALS		114.0	26,380		

WELL SYMBOLS



CARTER COORDINATE MAPPING SYSTEM

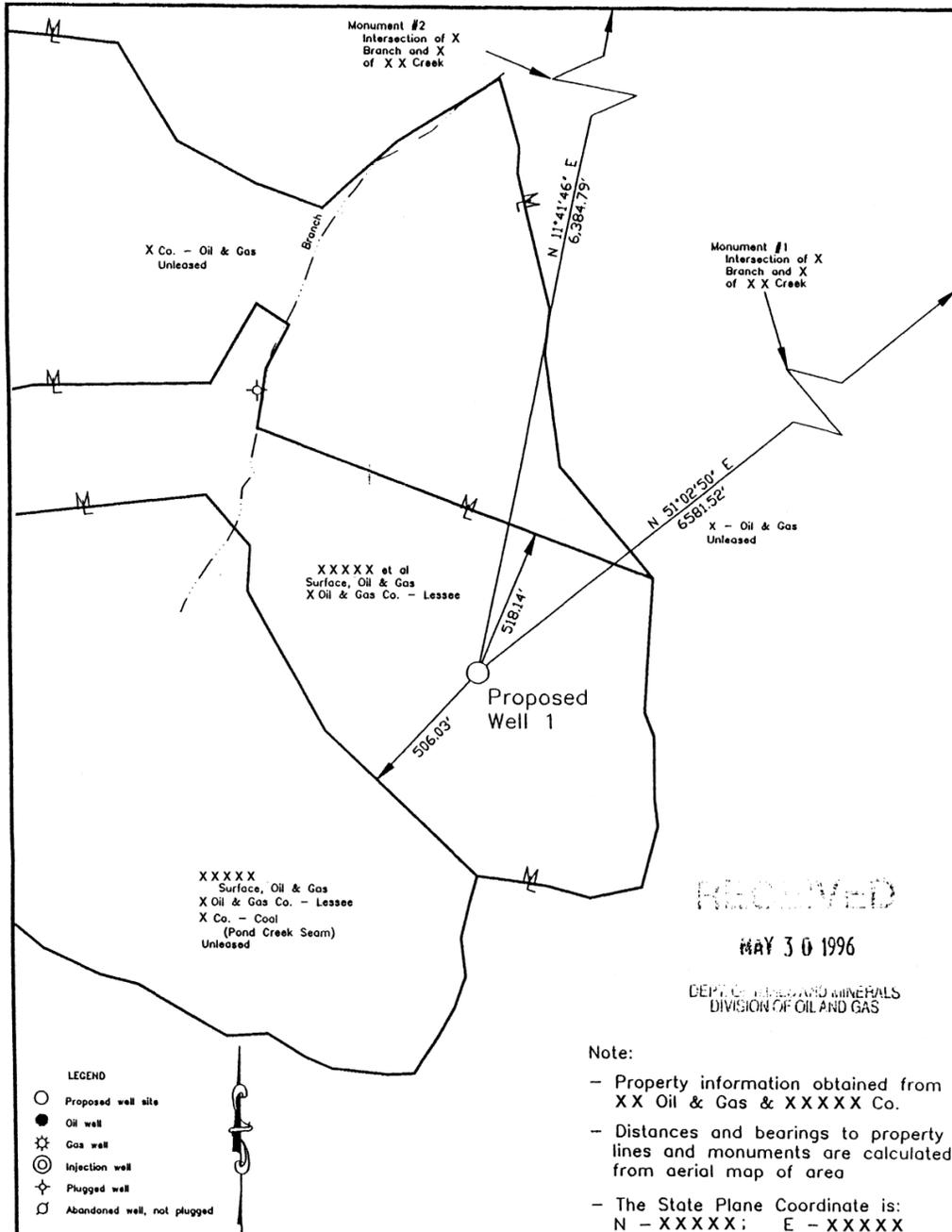


DEFINITION:

7.5' Topographic maps have 1 minute (1') marks along the boundary. Wells in Kentucky are located by the Carter Coordinate system which is measured (in feet) from the 1 minute (1') section boundaries. The coordinate system traverses Kentucky in a grid pattern with 5 minute (5') sections comprised of 25 smaller 1 minute sections. The south-to-north 5 minute boundary ranges from the letters "A through Z and AA though GG". The west-to-east 5 minute boundary ranges from "0 to 91". Dimensions of the smaller 1 minute sections are 6,060 feet (north-south) by 4,850 feet (west-east). Wells are measured from the section boundary.

Above referenced example has well located in **Section 11-M-84 2,900' FNL (From North Line) X 1,500' FWL (From West Line).**

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RECEIVED
MAY 30 1996
DEPT. OF GEOLOGICAL MINERALS
DIVISION OF OIL AND GAS

- LEGEND
- Proposed well site
 - Oil well
 - ⊗ Gas well
 - ⊕ Injection well
 - ⊙ Plugged well
 - ⊘ Abandoned well, not plugged

Note:

- Property information obtained from XX Oil & Gas & XXXXX Co.
- Distances and bearings to property lines and monuments are calculated from aerial map of area
- The State Plane Coordinate is: N - XXXXX; E - XXXXX

COMPANY XXXXX ADDRESS XXXXX
FARM XXXXX WELL NO. 1 ELEV.(MSL) 1330.11'
COUNTY Pike DISTRICT _____ QUADRANGLE XXXXX
LATITUDE X° X' X" LONGITUDE X° X' X"
CARTER COOR. F.S.L. F.N.L. X F.E.L. X SEC. X LETTER N NO. X
NEW LOCATION DRILL DEEPER ABANDONMENT

I HEREBY CERTIFY THAT THE ABOVE PLAT IS ACCURATE AND CORRECT AND SATISFIES THE REQUIREMENTS OF 805 KAR .1:030 TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SIGNATURE _____ REGISTRATION NO. _____
NAME _____ DATE _____

WELL LOCATION MAP
FILE NO. _____

FILE NO. _____ DRW. NO. _____ DATE _____ SCALE 1"=400'

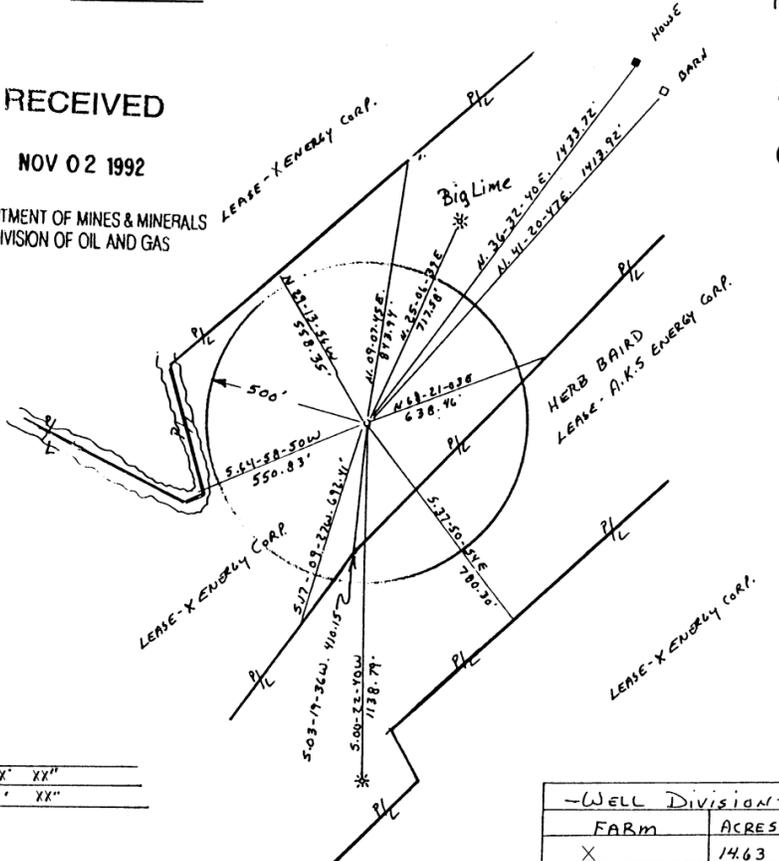
LEASE NO. _____

N. mag.

RECEIVED

NOV 02 1992

DEPARTMENT OF MINES & MINERALS
DIVISION OF OIL AND GAS



LAT. = XX° XX' XX"
LONG. = XX° XX' XX"

OPERATOR _____
 FARM _____
 COUNTY _____
 WELL NO. _____
 ELEVATION 980.0 by inst.
 QUADRANGLE _____
 SCALE 1" = 400'

-WELL DIVISION-		
FARM	ACRES	%
X	14.63	81.14
X	3.40	18.86
TOTAL	18.03	100%

CARTER COORD.
 = =
 sec. letter no.
 F.N.L. _____
 F.S.L. _____
 F.E.L. _____
 F.W.L. _____

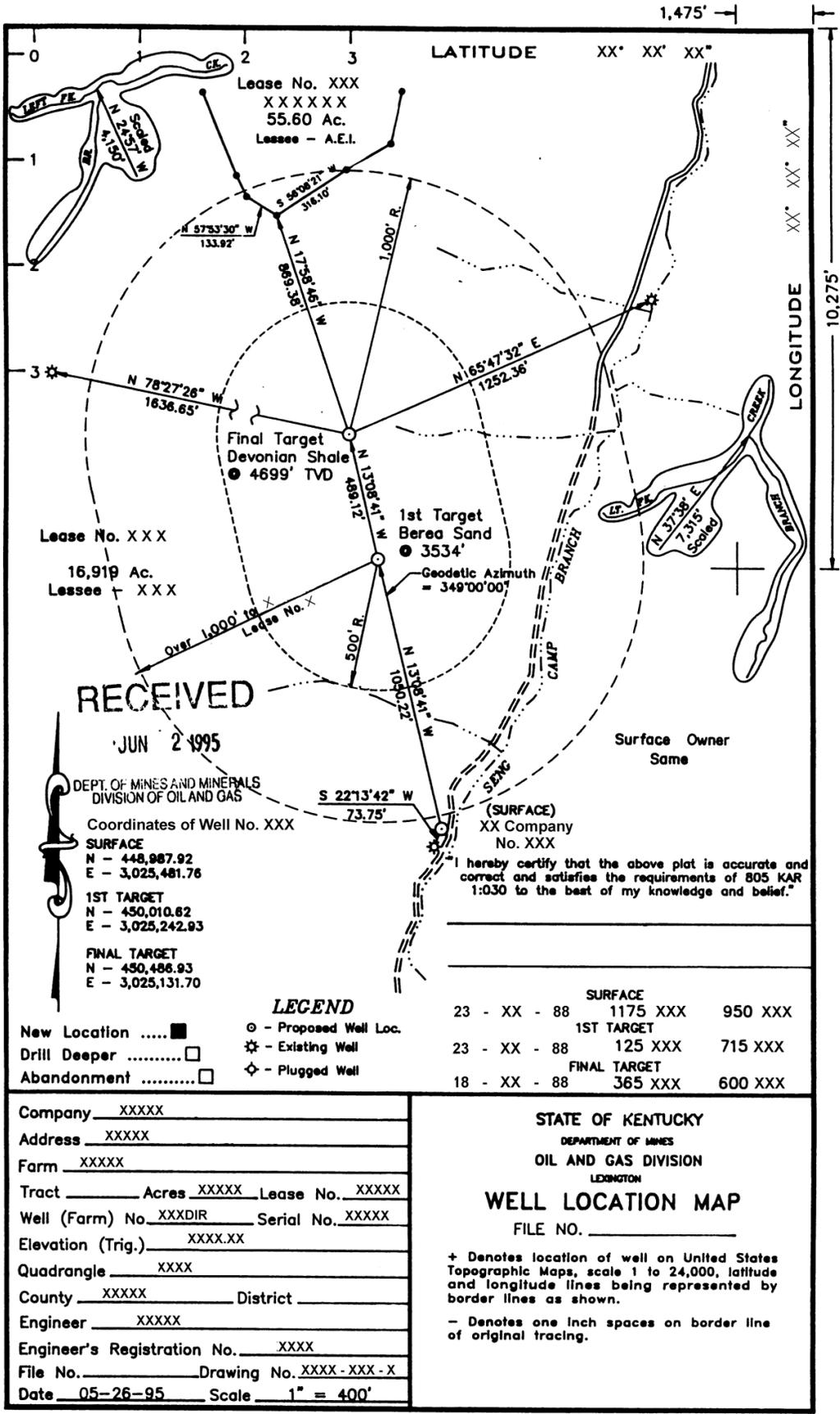
I HEREBY CERTIFY THAT THE ABOVE PLAT IS ACCURATE AND CORRECT AND SATISFIES THE REQUIREMENTS OF 805 KAR 1:030 TO THE BEST OF MY KNOWLEDGE AND BELIEF.

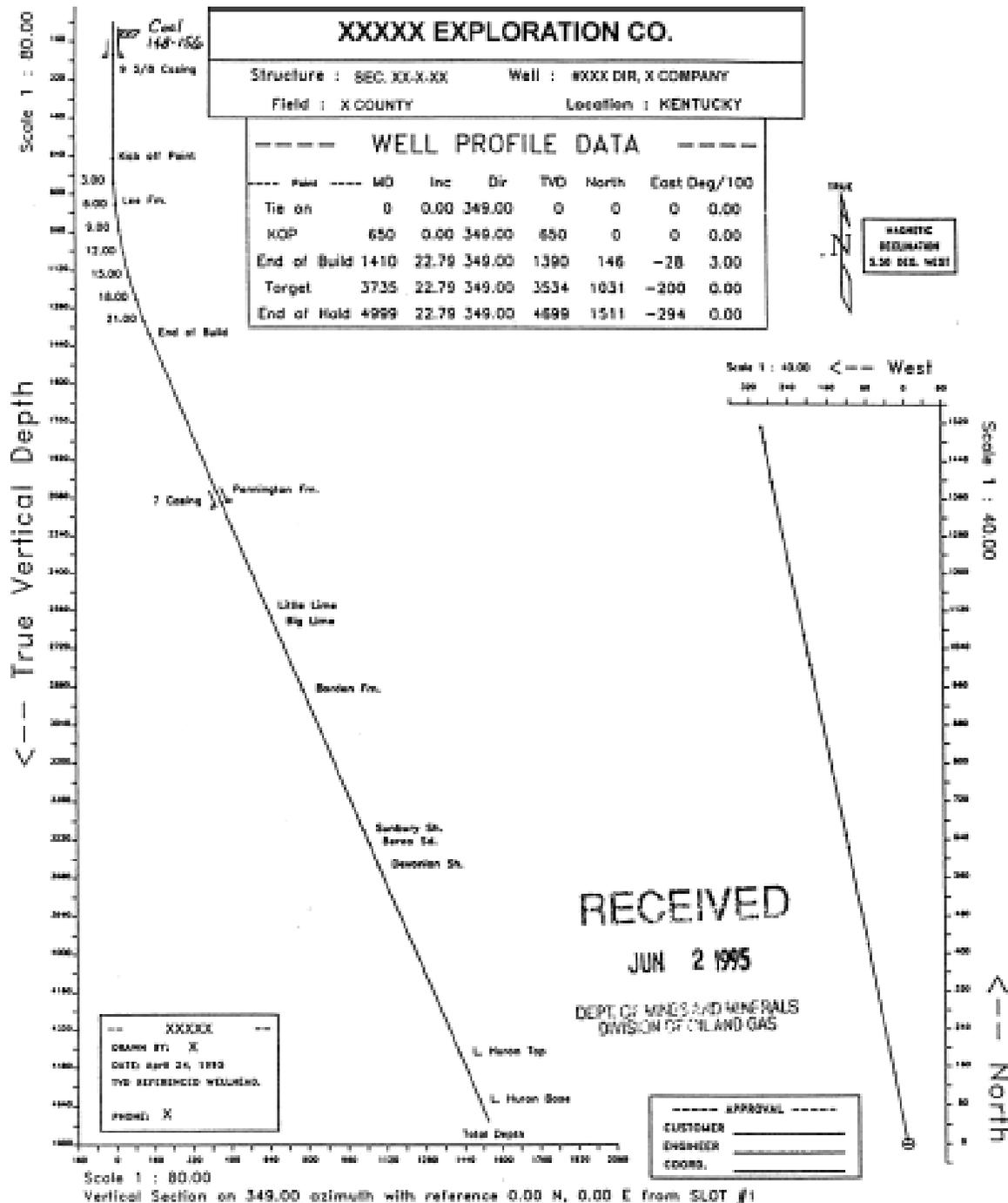
DATE _____

- LEGEND
- — PROPOSED WELL SITE
 - — OIL WELL
 - ⊙ — INJECTION WELL
 - ✱ — GAS WELL
 - ◇ — PLUGGED WELL
 - ⊕ — ABANDONED WELL, NOT PLUGGED
 - — BARN
 - — HOUSE
 - ⊕ — CHURCH
 - ~~~~~ — CREEK, BRANCH, OR WATERWAY
 - — ROADWAY



PREPARED BY _____





LISTING OF APPROVED LANDFILLS IN KENTUCKY

Barren County

City of Glasgow
126 East Public Square
P O Box 278
Glasgow, KY 42124-2078
(502) 651-3338 (Office)
(502) 678-4302 (Landfill)

Daviess County

212 Saint Ann Street
Room 202
Owensboro, KY 42303
(502) 685-8424 (Office)
(502) 229-4484 (Landfill)

Grant County

Epperson Waste Disposal
P O Box 117
Williamstown, KY 41097
(606) 969-2355 (Office)
(606) 223-3824 (Landfill)
(606) 928-0239 (Landfill)

Jefferson County

Waste Management of KY, LLC
7501 Grade Lane
Louisville, KY 42019-3440
(502) 969-2355 (Office)
(502) 966-0272 (Landfill)

Logan County

Southern Sanitation Co.
P O Box 537
Russellville, KY 42276-0537
(502) 726-9016 (Off & Landfill)

Nelson County

Nelson County Fiscal Court
1025 Airport Road
Bardstown, KY 40004
(502) 348-1800 (Office)
(502) 348-1877 (Landfill)

Pike County

Pike County Fiscal Court
P O Box 1229
Pikeville, KY 41501
(606) 353-7304 (Office)

Trimble County

Laidlaw Waste Systems, Inc
9001 Airport Freeway
Suite 500
N Richland Hills, TX 76180
(817) 485-9629 (Office)
(502) 743-5436 (Landfill)

Boone County

Bavarian Trucking Company
4837 Madison Pike
Independence, KY 41051
(606) 485-4416 (Off & Landfill)

Estill County

Waste Management of KY, LLC
7501 Grade Lane
Louisville, KY 40219-3440
(502) 969-2355 (Office)
(502) 723-5552 (Landfill)

Graves County

Jones Sanitation, Inc
P O Box 26
Hickman, KY 42050
(502) 247-9023 (Office)

Laurel County

Laurel Ridge Landfill, Inc
P O Box 1364
Corbin, KY 40702
(606) 864-4391 (Off & Landfill)

Marshall County

LWD Sanitary Landfill
P O Box 327
Calvert City, KY 42029-0327
(502) 395-8313 (Off & Landfill)

Ohio County

Ohio County Fiscal Court
Courthouse
P O Box 146
Hartford, KY 42347-0146
(502) 298-4400 (Office)
(502) 298-7501 (Landfill)

Rowan County

Local Sanitation Services, Inc
P O Box 484
Morehead, KY 40351-0484
(606) 784-6544 (Off. & Landfill)

Union County

Addington Environmental, Inc
771 Corporate Drive
Suite 1000
Lexington KY 40503
(606) 223-3284 (Office)
(502) 822-4289 (Landfill)

Boyd County

Cooksey Brothers Disposal Co, Inc
15400 Ellington Run
Ashland, KY 41102
(606) 928-9633 (Off & Landfill)

Franklin County

Browning Ferris Ind. Of KY, Inc
2157 Highway 151
Frankfort, KY 40601
(502) 227-7336 (Office)
(502) 227-7257 (Landfill)

Greenup County

Green Valley Environmental Group
2343 Alexandria Drive, Suite 400
Lexington, KY 40504
(606) 223-3824 (Office)

Lincoln County

Tri K Landfill, Inc
P O Box 435
1905 Highway 3249
Stanford, KY 40484
(606) 365-7806 (Off & Landfill)

Montgomery County

Rumpke of Kentucky, Inc
10795 Hughes Road
Cincinnati, OH 45251
(513) 851-0122 (Office)
(606) 498-6798 (Landfill)

Pendleton County

Rumpke of Kentucky, Inc
10795 Hughes Road
Cincinnati, OH 45251
(513) 851-0122 (Office)
(606) 472-7011 (Landfill)

Spencer County

Williams Landfill, Inc
Route 3, Box 229 Kings Church
Taylorsville, KY 40071
(502) 239-6038 (Office)
(502) 239-2117 (Landfill)

Whitley County

Tri-County Sanitary Landfill, Inc
Route 8
P O Box 245-A
Corbin, KY 40701
(502) 528-8608 (Landfill)

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**Department for Natural Resources
Division of Oil and Gas
KRS 353.660 (2)**

Upon request by the department, any person to whom a permit is issued shall save for the Kentucky Geological Survey samples of all cuttings from the well drilled or deepened pursuant to the permit for a period of ninety (90) days after completion thereof.

**GUIDELINES FOR OIL AND GAS OPERATORS
SUBMITTING WELL SAMPLES TO KGS**

Rev. 11/01/12

To ensure that credit is received for submitting requested well samples, please follow these instructions carefully.

1. For greater efficiency the Kentucky Geological Survey only requires the following information to be filled out on each tag of each sample bag:

a. In the space designated COMPANY: _____ Write the PERMIT NO. _____

b. Fill out the DEPTH: FROM _____ TO _____

SAMPLE BAG TAGS

<i>INSTRUCTIONS</i>	<i>EXAMPLE</i>
COMPANY: _____ (Write Permit No. Here)	COMPANY: _____ #109636
LEASE NAME: _____ (Leave Blank)	LEASE NAME: _____
WELL NO: _____ (Leave Blank)	WELL NO: _____
SEC _____ (Leave Blank) TWP _____ (Leave Blank) RGE _____ (Leave Blank)	SEC _____ TWP _____ RGE _____
DEPTH: FROM _____ (Fill Out) TO _____ (Fill Out)	DEPTH: FROM <u>2520</u> TO <u>2530</u>

2. All written information must be legible, and in permanent ink or ballpoint pen. Information written with felt-tip pen or pencil is easily washed off, making it impossible to identify samples.
3. As an extra precaution, place a copy of the drilling permit in the container with the sample set. If samples are not properly identified, no credit can be given to your company.
4. Samples should be complete for each well requested, with continuous samples from surface to total depth in 10 foot intervals.
5. Place the samples in feed sacks, burlap bags, plastic buckets or a strong cardboard box.
6. Do not put sample sets in plastic trash bags; these causes the sample bags to rot and split open, making the samples useless.
7. Do not overfill the sample containers with sample bags. This makes them difficult to handle and poses a risk of injury.
8. Individual sample bags should be completely filled and tied into manageable bundles of 10 bags each.
9. Please do not tie knots in the strings of the individual sample bags.
10. Samples may be mailed to or dropped off at the Kentucky Geological Survey's Well Sample and Core Library in Lexington or dropped off at any of the designated collection stations located throughout the state.

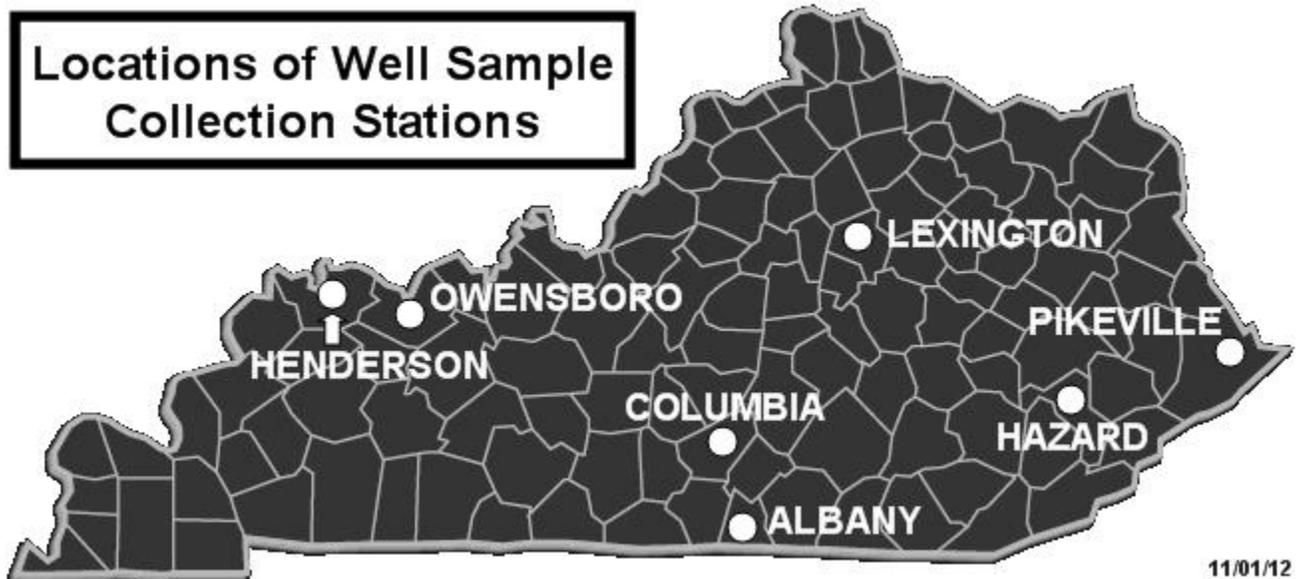
If you have any questions concerning these instructions or about the locations of sample collection stations, please contact the

**KENTUCKY GEOLOGICAL SURVEY
Well Sample and Core Library
Phone (859) 389-8810 Fax (859) 389-8716**

Drill Samples - Generation and Storage

The Kentucky Geological Survey's Well Sample Library maintains catalogues of drill cuttings of wells strategically located throughout Kentucky. If the samples are requested by the Survey, the well permit will be stamped accordingly. The operator shall deposit the samples at the nearest collection facility provided by the Survey.

Statute-KRS 353.660



Listing of Well Sample Collection Stations

LEXINGTON

Kentucky Geological Survey
Well Sample & Core Library
2500 Research Park Drive
(859) 389-8810

PIKEVILLE

Office of Mine Safety & Licensing
284 Weddington Branch Rd.
Pikeville, KY 41501
(Impoundment Area)
606-433-7742

HAZARD

Office of Mine Safety & Licensing
556 Village Lane
Hazard, KY 41701
(Impoundment Area)
(606) 435-6079

HENDERSON

Ken's Pump & Supply Co.
1531 South Green Street
(270) 827-1872

OWENSBORO

Owensboro Supply Co.
731 East 18th Street
(270) 683-8318

ALBANY

BWI Pipe and Supply
616 South Columbia St.
(606) 387-6411

COLUMBIA

Petty's Supply
5824 Burkesville Road
(502) 378-6175

Example Of A Danger Sign Required in 805 KAR1:160

An operator shall prepare or have a safety sign printed similar to the one shown below and with the following dimensions.

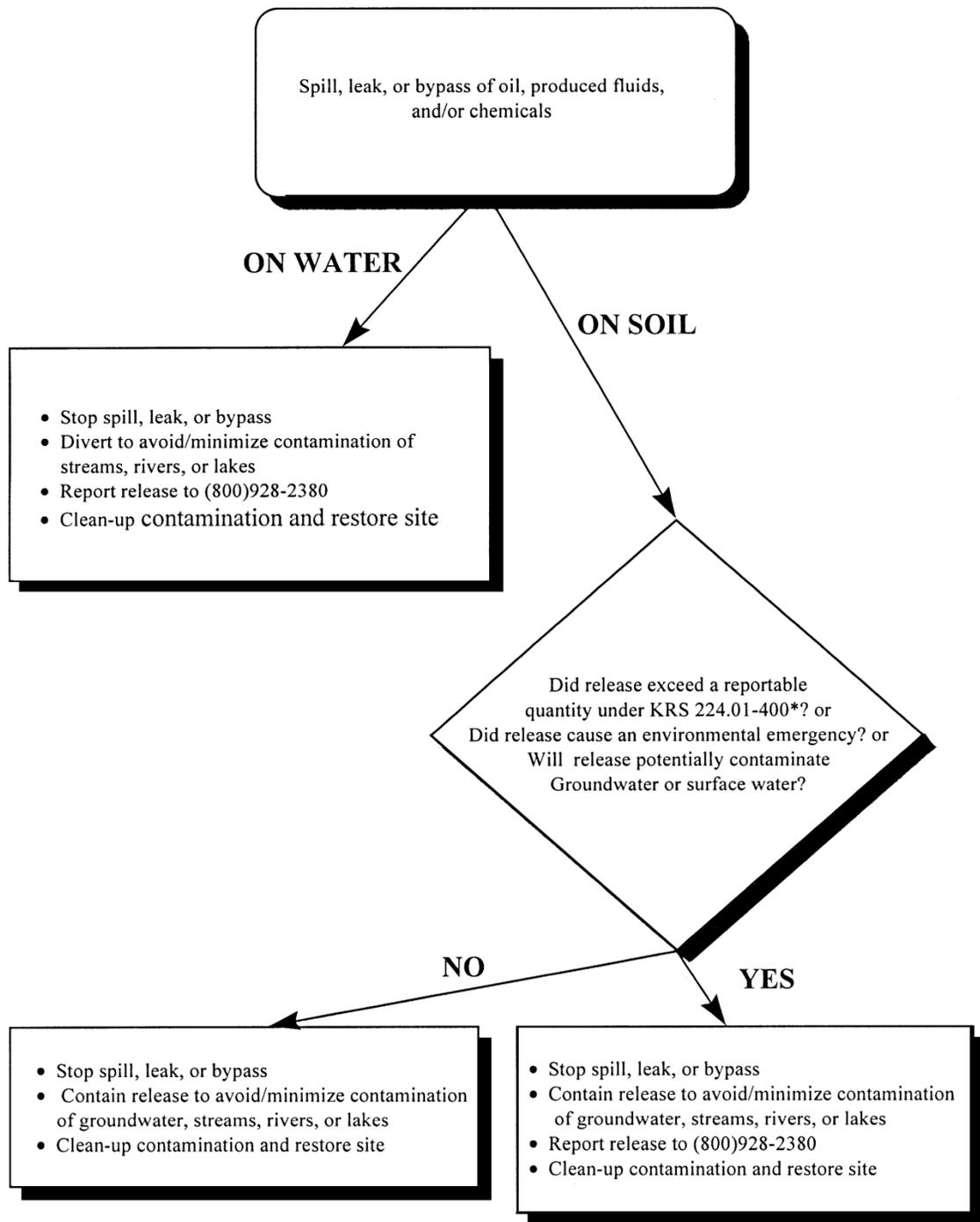
1. The sign shall be approximately 17"x 28" inches.
2. The word **DANGER** shall have letters approximately 3 to 4 inches in height.
3. The NFPA numbers shall have a height of approximately ½ to 1 inch.
4. The words "PETROLEUM CRUDE OIL", "EXTREMELY FLAMMABLE LIQUID AND VAPOR", "MAY CAUSE FLASH FIRES" and "NO TRESPASSING" shall have letters approximately ½ to 1 inch in height.
5. The words "NO SMOKING AND OPEN FLAME" shall have letters approximately 1 to 1 ½ inches in height. A no smoking symbol with a cigarette in a circle with a cross through shall be on each side of the words "NO SMOKING AND OPEN FLAME".

The following coloration shall be required:

1. The NFPA number one (1) shall be colored black and be in a blue square and the number three (3) shall be colored black and be in a red square and the number zero (0) shall be colored black and be in a yellow square.
2. The NFPA number instead of being in a colored square may be the color of the square in the same respective position as it's square.
3. The background color of white works well with NFPA colors and numbers.
4. The background color shall contrast with all the foreground letters and numbers to enable them to be clearly seen.

The following is an example of the sign:





* The reportable quantity for oil (including lubricants and other petroleum products) is 25 gallons, except for diesel fuel the reportable quantity is 75 gallons

DIVISION OF OIL AND GAS

Common Cited Violations

KRS 353.150-Failure of operator to not close well within a reasonable time not exceeding three (3) months after well completion to prevent escape of oil, gas or salt water from wellhead.

KRS 353.160-Failure to prevent escape of gas when it is apparent waste could have been prevented, operator usually cited due to negligence. In the case of gas being vented or flared to produce oil, the operator shall make a “good faith” effort to conserve as much gas as reasonably possible.

KRS 353.180-Pull Pipe without Plugging Well. Operator shall plug well if casing is removed from an oil or gas well.

KRS 353.205-Failure to Report Oil and/or Gas Production. Operator shall supply Division of Oil and Gas with annual production by April 15, for previous year’s production.

KRS 353.500-Failure to Conduct Operations Safely. Operator shall produce wells in a safe manner to prevent damage to property, employees and general public.

KRS 353.520 Section 2-D and 805 KAR 1:020-Failure to protect freshwater zones and/or mineable coal seams by not properly cementing casing to surface.

KRS 353.550-Improperly Abandoned. Wells shall be in production or are considered Improperly Abandoned. Gas wells shut-in due to market conditions are not included.

KRS 353.560 (3)-Operating a Vacuum without a Permit. Operator shall file permit to use vacuum on reservoir to enhance oil production.

KRS 353.570-Drilling Without a Permit. Wells drilled, deepened or re-opened for the production of natural gas, crude oil or for water injection into a formation to enhance production requires operator to obtain a well permit.

KRS 353.590-Operating without Proper Bonding. Operator shall post blanket or individual bond on well before drilling or acquiring well from another operator.

KRS 353.590 (6)-Failure to Transfer Well to Successor Operator. Bonded operator shall file Well Transfer forms with Division of Oil and Gas to transfer well to another operator.

KRS 353.5901-Failure to Reclaim Well Location on Severed Minerals. Wells on severed mineral tracts shall be reclaimed 1 year after termination of operations, reclamation shall conform to procedure on “Plan to Prevent Erosion of and Sedimentation From A Well Site.”

KRS 353.610-Improper Spacing of Well. Proposed wells shall adhere to spacing from existing wells and property lines. See “Shallow and Deep Well” spacing requirements in manual.

KRS 353.651-Drilling Deeper than 4,000 Ft.-Below 4,000 ft. is considered “Deep” well, with exception to area where Devonian Shale productive interval exceeds 4,000 ft. east of longitude 84 degrees 30 minutes. Deep wells shall conform to deep well spacing.

KRS 353.656-Failure to Post “DANGER” Signs. Operator shall post Danger signs on prominent location on all oil storage tank batteries and facilities.

KRS 353.660-Failure to File Well Records-Operator shall file “Well Log and Completion Report” and electric logs with the Division of Oil and Gas within 90 days after drilling. If well is plugged, a “Plugging Affidavit” is also required.

DIVISION OF WATER

Common Cited Violations

401 KAR 5:015-Failure to report a spill/bypass, such as an unreported oil spill, spill of produced water, and spill from a drilling pit.

KRS 224.01-400-Failure to report and cleanup any spill that creates an environmental emergency. Improper or inadequate cleanup of a spill would result in remedial action taken to restore the environment.

401 KAR 5:031-An event where the waters of the Commonwealth have incurred degradation. For example, the spill or release of crude oil, brine (produced water) or drilling fluids to a stream.

401 KAR 5:055-Failure to obtain a Kentucky Discharge Elimination System (KPDES) permit before discharging produced water or drilling fluids.

401 KAR 5:065-Failure to comply with the KPDES permit or program requirements and standards. Example: analysis of the discharge shows non-compliance with the KPDES permit's conditions or failing to submit Discharge Monitoring Report (DMR) forms. Also, in cases where a discharge violates water quality standards.

401 KAR 5:090, Section 4-Failure to register an oil/gas facility within sixty (60) days after production begins. Failure to post a sign identifying the facility's registration number, operator's name, address, phone number and if applicable, the KPDES permit number. Failure to notify the Division of Water of a change in owner/operatorship of the facility and/or changes in the method of storing and disposing of the produced water.

401 KAR 5:090, Section 13-Failure to implement and/or maintain an adequate Spill Prevention and Countermeasure (SPCC) plan. For example, a tank battery without a dike or berm around it and it not having the capability to retain volume of the largest tank within that battery.

401 KAR 5:090, Section 10-Unauthorized use of a pit. For example, a drilling pit being used as a holding pit without obtaining a construction and operational permit for this use.

401 KAR 5:090 Section 6-Failure to obtain approval from the Director of the Division of Water to transport produced water off site prior to doing so.

401 KAR 5:090 Section 5-Failure to dispose of produced water under an approved method, so that water quality standards are not violated.

KRS 151.250 and 401 KAR 4:060-Activities cited are: placement of fill material in the 100-year floodplain, the construction of a bridge, installation of a culvert, or a stream alteration without a permit.

DIVISION OF WASTE MANAGEMENT
Common Cited Violations

401 KAR 30:031- Violation of environmental performance standards.

401 KAR 32:010 - Failure to determine if a waste the operation generates is a hazard waste.

KRS 224.01-400(1) THROUGH (11)- Failure to report releases above a reportable quantity.

KRS 224.01-400(18)- Failure to remediate all releases, even those that are below a reportable quantity.

KRS 224.01-405- Failure to perform appropriate corrective action in response to a petroleum release.

KRS 224.40-100(1)- Failure to transport to or dispose of waste at any site or facility other than one for which a permit for waste disposal has been issued by the Division of Waste Management.

KRS 224.40-100(2)- Using or creating an open dump.

KRS 224.40-305- Establishing, constructing, operating, maintaining, or permitting the use of a waste site or facility without a permit.

Kentucky Energy & Environment Cabinet Department for Natural Resources

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Office of Mine Safety & Licensing

Freddie Lewis, Executive Director
1025 Capital Center Drive
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502-573-0140 Phone
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LIST OF MATERIALS FOR PLASTIC SERVICE LINE

REQUIRED BY APPLICANT FOR GAS SERVICE UNDER KRS 278.485

<u>Item</u>	<u>Description</u>
1.	1 – 1" heavy brass stopcock, or 1" ball valve
2.	1 – 1" street ell, heavy black steel
3.	2 – 1" ground joint union, heavy black steel
4.	Drip tank, minimum test pressure 600 psig, includes ½" stopcock and plug
5.	1" medium pressure regulator, spring type, 200 psig inlet to 10-25 psig outlet, minimum working pressure 600 psig, internal relief capabilities optional
6.	1 " low pressure regulator, spring type, 10-25 psig inlet to 8 oz. outlet, minimum working pressure 100 psig, must be equipped with automatic cutoff and manual reset, internal relief capabilities optional
7.	1 – 1" tee, black steel
8.	1 – 1" x ¼" bushing, black steel
9.	1 – ¼" plug, black steel
10.	1 – 1" standard brass stopcock
11.	1 – 1¼" x 5' pipe threaded on one end, new black steel
12.	2 – 1¼" 90° compression ells
13.	1¼" approved plastic gas pipe with tracer wire
14.	1¼" x 36" steel pipe, threaded on both ends
15.	1 – 1¼" standard brass stopcock

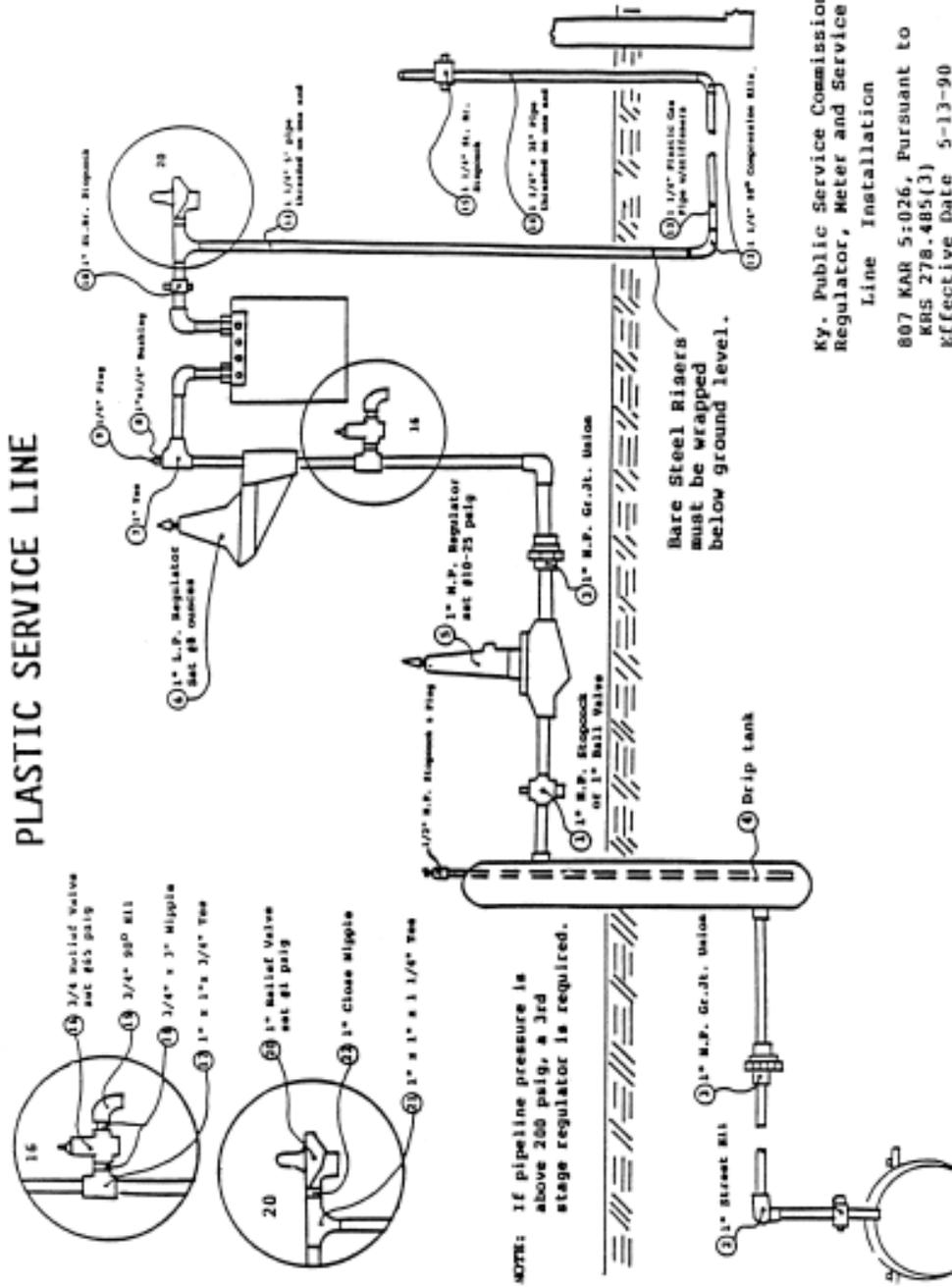
Other parts needed for assembly

- 6 – 1" x 3" nipples, heavy black steel
- 5 – 1" x 6" nipples, heavy black steel
- 2 – 1" x 12" nipples, heavy black steel
- 2 – 1" x 2" nipples, heavy black steel
- 4 – 1" 90° ells, heavy black steel

Relief Valve Assembly List if Regulators Are Not Equipped With Internal Relief Capabilities

16.	¾" pressure relief valve, spring loaded, set to relieve at 65 psig
17.	1 – 1" x ¾" tee, heavy black steel
18.	2 – ¾" x 3" nipple, heavy black steel
19.	1 – ¾" 90° ell, heavy black steel with bug screen
20.	1" pressure relief valve, spring loaded with screened vent, set to relieve at 1 psig
21.	1 – 1" x 1" x 1¼" tee, black steel
22.	1 – 1" close nipple, heavy black steel

PLASTIC SERVICE LINE



Ky. Public Service Commission
Regulator, Meter and Service
Line Installation

807 KAR 5:026, Pursuant to
KRS 278.485(3)
Effective Date 5-13-90

LIST OF MATERIALS FOR COATED STEEL SERVICE LINE

REQUIRED BY APPLICANT FOR GAS SERVICE UNDER KRS 278.485

<u>Item</u>	<u>Description</u>
1.	1 – 1" heavy brass stopcock, or 1" ball valve
2.	1 – 1" street ell, heavy black steel
3.	2 – 1" ground joint union, heavy black steel
4.	Drip tank, minimum test pressure 600 psig, includes 1/2" stopcock and plug
5.	1" medium pressure regulator, spring type, 200 psig inlet to 10-25 psig outlet, minimum working pressure 600 psig, internal relief capabilities optional
6.	1" low pressure regulator, spring type, 10-25 psig inlet to 8 oz. Outlet, minimum working pressure 100 psig, must be equipped with automatic cutoff and manual reset, internal relief capabilities optional
7.	1 – 1" tee, black steel
8.	1 – 1" x 1/4" bushing, black steel
9.	1 – 1/4" plug, black steel
10.	1 – 1" standard brass stopcock
11.	1 – 1 1/4" x 12" nipple, threaded on one end, new black steel
12.	1 – 1 1/4" insulating coupling
13.	1 – 1 1/4" x 40" pipe, threaded on one end, new black steel
14.	1 – 1 1/4" street ell, black steel
15.	1 1/4" coated steel pipe
16.	1 1/4" x 36" steel pipe, threaded on both ends
17.	1 – 1 1/4" standard brass stopcock
18.	1 – 1 1/4" standard ground joint insulating union, black steel

Other parts needed for assembly

- 6 – 1" x 3" nipples, heavy black steel
- 5 – 1" x 6" nipples, heavy black steel
- 2 – 1" x 12" nipples, heavy black steel
- 2 – 1" x 2" nipples, heavy black steel
- 4 – 1" 90° ells, heavy black steel
- 2 – 1 1/4" 90° ell, black steel

Relief Valve Assembly List if Regulators Are Not Equipped With Internal Relief Capabilities

- 19. 1/4" pressure relief valve, spring loaded, set to relieve at 65 psig
- 20. 1 – 1" x 1" x 3/4" tee, heavy black steel
- 21. 2 – 3/4" x 3" nipple, heavy black steel
- 22. 1 – 3/4" 90° ell, heavy black steel with bug screen
- 23. 1" pressure relief valve, spring loaded with screened vent, set to relieve at 1 psig
- 24. 1 – 1" x 1" x 1 1/4" tee, black steel
- 25. 1 – 1" close nipple, heavy black steel

APPENDIX B

Division of Oil & Gas Forms

Application for Permit.....	B-1
Annual Production Report & Instructions.....	B-5
Casing and Cementing Plan.....	B-8
Certificate of Injection Well.....	B-11
Certificate of Formation Offset and Vertical Depth.....	B-14
Gathering Line Permit Application.....	B-15
Gathering Line Operator’s License.....	B-17
Plan to Prevent Erosion and Sedimentation from a Well Site.....	B-18
Permit for Use of a Vacuum.....	B-21
Plugging Affidavit.....	B-22
Temporary Abandonment Permit.....	B-24
Testing Permit & Report of Investigation for Testing.....	B-25
Well Log & Completion Report.....	B-28
Well Transfer Form.....	B-30
Letter of Credit.....	B-31
Surety Bond.....	B-33
Blanket Surety Bond.....	B-34
Verification of Certificate of Deposit.....	B-35

Division of Water Forms

Application to Construct Across or Along a Stream.....	B-37
Instructions for Approval of Construction in a Floodplain.....	B-39
Wild Rivers Program Application for Change of Use Permit.....	B-43
Oil & Gas Facility Registration Form & Instructions.....	B-47
Oil & Gas Facility Registration Transfer Form.....	B-50
Application to Dispose of Produced Water Off-Facility.....	B-51
Application & Instructions for Construction of Produced Water Holding Pit.....	B-53

Fire Marshal’s Office Forms

Fire Marshal’s Office Aboveground Storage Tank Application.....	B-56
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Office of Mine Safety & Licensing Forms

Application to Mine Within 300 Feet of a Well.....	B-64
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COMMONWEALTH OF KENTUCKY
 DEPARTMENT FOR NATURAL RESOURCES
 DIVISION OF OIL AND GAS
 P. O. BOX 2244
 FRANKFORT, KY 40602
 PHONE: (502) 573-0147

FOR OFFICE USE ONLY	
RECORD NO.:	_____
FEE:	_____
BOND:	_____
PLAT:	_____
FWD:	_____
SAMPLES:	_____
PERMIT NO.:	_____
RESTRICTED AREA:	_____

APPLICATION FOR PERMIT

TYPE OR PRINT

1. TO DRILL , DEEPEN , _____ , REOPEN _____ , A WELL
PREVIOUS PERMIT NO. PREVIOUS PERMIT NO.
2. WELL OPERATOR (APPLICANT) _____
(MUST BE IDENTICAL TO NAME ON BOND)
3. PERMANENT ADDRESS _____
STREET CITY
 STATE ZIP E-MAIL _____ PHONE _____
4. ADDRESS FOR MAILING PERMIT _____
5. MINERAL OWNER (LESSOR) _____
(ATTACH ADDITIONAL SHEETS AS NEEDED - ELECTRONIC VERSION, SEE PAGE 3)
 ADDRESS _____
 ZIP _____ PHONE _____ E-MAIL ADDRESS _____
 COUNTY _____ WELL NUMBER _____ LEASE EXPIRATION DATE _____
6. CARTER FNL FEL
 COORDINATES FSL FWL SEC _____ LETTER _____ NUMBER _____
7. ELEVATION BEFORE GRADING _____ ELEVATION AFTER GRADING IF DIFFERENT _____
ELEVATION CHANGES MUST BE FILED WITH THIS OFFICE PRIOR TO PLUGGING THE WELL.
8. NAME OF DEEPEST GEOLOGIC FORMATION TO BE TESTED _____
max depth to permit
9. THIS PROPOSED WELL IS TO BE DRILLED FOR THE FOLLOWING PURPOSE

A. OIL - PRIMARY <input type="checkbox"/>	D. WATER SUPPLY <input type="checkbox"/>	G. SALT WATER DISPOSAL <input type="checkbox"/>
B. GAS - PRIMARY <input type="checkbox"/>	E. ENHANCED RECOVERY INJECTION <input type="checkbox"/>	H. STRATIGRAPHIC TEST <input type="checkbox"/>
C. GAS STORAGE <input type="checkbox"/>	F. ENHANCED RECOVERY PRODUCTION <input type="checkbox"/>	I. OBSERVATION <input type="checkbox"/>
10. A. IS THIS WELL TO BE COMPLETED IN A RESERVOIR WHICH HAD INJECTION WELLS IN EXISTENCE PRIOR TO THE EFFECTIVE DATE OF 805 KAR 1:110. YES NO
 B. THE OPERATOR OF A PROPOSED INJECTION WELL MUST OBTAIN A PERMIT TO DRILL (THIS APPLICATION) AND A SEPARATE PERMIT TO INJECT. THE PERMIT TO INJECT SHALL SATISFY THE REQUIREMENTS OF 805 KAR 1:110.
11. WILL THIS WELL PENETRATE COAL BEARING STRATA? YES NO IF YES, COMPLETE BOX BELOW.

IS THE COAL OWNED, OPERATED OR LEASED BY ANY PERSON OTHER THAN THE OIL OR GAS LESSEE OR LESSOR? YES <input type="checkbox"/> NO <input type="checkbox"/> COAL OWNER AND ADDRESS: _____
THE UNDERSIGNED APPLICANT HAS SENT A COPY OF THIS APPLICATION AND THE WELL LOCATION PLAT BY REGISTERED OR CERTIFIED MAIL TO ALL COAL OWNERS AND OPERATORS NAMED HEREIN ON THE SAME DATE THAT THIS APPLICATION WAS MAILED TO THE DEPARTMENT.
13. WILL THIS WELL BE DRILLED WITHIN THE AREA OF A GAS STORAGE FIELD AS DEFINED BY THE DIVISION OF GAS AND OIL REGULATION 805 KAR 1:080? YES NO
 GAS STORAGE FIELD OWNER AND ADDRESS: _____

THE UNDERSIGNED APPLICANT HAS SENT A COPY OF THIS APPLICATION AND THE WELL LOCATION PLAT BY REGISTERED OR CERTIFIED MAIL TO ALL COAL OWNERS AND OPERATORS NAMED HEREIN ON THE SAME DATE THAT THIS APPLICATION WAS MAILED TO THE DEPARTMENT.

14. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER) (ATTACH ADDITIONAL SHEETS AS NEEDED - ELECTRONIC VERSION, SEE PAGE 4.)
 ADDRESS _____
 E-MAIL ADDRESS _____
15. SURFACE OWNERS NOTIFICATION OF INTENT TO DRILL.
 METHOD OF NOTIFICATION: CERTIFIED MAIL (COPY OF LETTER AND RETURN RECEIPT ATTACHED)
 PERSONAL DELIVERY (DATE _____) (COPY OF NOTIFICATION ATTACHED)
16. DRILLING CONTRACTOR _____
 ADDRESS _____
 PHONE NUMBER _____ E-MAIL ADDRESS _____
17. U.S.G.S. QUADRANGLE _____
NAME MAP YEAR

18. IS THIS PROPOSED WELL LOCATED ON, OR WILL IT BE NECESSARY TO CROSS LAND WHICH IS CURRENTLY UNDER PERMIT OR BOND BY A COALOPERATOR AS REQUIRED BY KRS CHAPTER 350? _____ YES NO

IS YES, LIST THE NAME AND ADDRESS OF CURRENT BONDED OPERATOR

HAS THE APPLICANT MET AND CONFERRED WITH, OR OFFERED TO MEET AND CONFER WITH THE BONDED OPERATOR? _____ YES NO

19. IS THE PROPOSED WELL A POOLED OR UNITIZED WELL? _____ YES NO

IF YES, BY WHAT AUTHORITY DOES THE APPLICANT HAVE TO POOL OR UNITIZED THIS PROPOSED WELL?

20. IS THE PROPOSED WELL A TWIN WELL TO AN EXISTING WELL OR WELLS? _____ YES NO

IF YES, WHAT IS THE PERMIT NUMBER(S) FOR THE EXISTING WELL(S)? _____

WHAT IS THE PRODUCING FORMATION AND INTERVAL OF THE EXISTING WELL(S)?

DESCRIBE THE MEASURES TO BE TAKEN TO ENSURE THAT THE TWIN WELLS WILL NOT PRODUCE FROM THE SAME RESERVOIR.

21. IS THIS PROPOSED WELL A HORIZONTAL OR DEVIATED WELL? _____ YES NO
IF YES, INDICATE THE LOCATION OF THE ENDPOINT OF THE WELLBORE BELOW.

CARTER _____ FNL _____ FEL _____
COORDINATES _____ FSL _____ FWL SEC _____ LETTER _____ NUMBER _____

WHAT IS THE ESTIMATED TOTAL LENGTH OF THE WELLBORE? _____

22. IF A CORPORATION, INDICATE STATE OF INCORPORATION _____

IS CORPORATION REGISTERED WITH KENTUCKY SECRETARY OF STATE? _____ YES NO

23. THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS THAT THE FOREGOING FACTS GIVEN IN THIS APPLICATION ARE TRUE AS THEREIN SET FORTH.

DATED THIS _____ DAY OF _____ A.D. 20 ____

24. THE APPLICANT ACKNOWLEDGES THAT OTHER LOCAL, STATE AND FEDERAL LAWS MAY APPLY TO A WELL DRILLED AT THIS LOCATION.

25. IF A CORPORATION, SIGNATORY MUST BE AN OFFICER OF THE COMPANY OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS.

IF A PRIVATE INDIVIDUAL, SIGNATORY MUST BE SAME OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS.

SIGNATURE OF APPLICANT TITLE

PRINT OR TYPE NAME OF APPLICANT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20____

NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

26. ALL APPLICATIONS MUST BE NOTARIZED. FILE THIS APPLICATION ALONG WITH A PERMIT FEE OF \$350.00 AND ONE (1) ORIGINAL AND TWO (2) COPIES OF THE WELL LOCATION PLAT. ALL BANKS MUST BE COMPLETED. INCOMPLETE APPLICATIONS WILL BE REJECTED.

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS

APPLICATION FOR PERMIT
(Attachment Page for Question #5)

5a. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5b. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5c. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5d. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5e. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5f. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5g. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5h. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

5i. MINERAL OWNER (LESSOR) _____
ADDRESS _____ ZIP _____ PHONE _____
E-MAIL ADDRESS _____ LEASE EXPIRATION DATE _____

ED-1 Attachment Page

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS

APPLICATION FOR PERMIT
(Attachment Page for Question #14)

14a. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14b. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14c. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14d. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14e. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14f. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14g. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14h. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____

14i. SURFACE OWNER _____
(IF DIFFERENT FROM MINERAL OWNER)
ADDRESS _____
E-MAIL ADDRESS _____



YEAR: _____

(NOTE: OPERATOR'S SIGNATURE IS REQUIRED ON THE BACKSIDE OF THIS FORM (ELECTRONIC COPY PAGE 2).)

OPERATOR NAME: _____

ADDRESS: _____

E-MAIL ADDRESS: _____

REPORT GAS WELLS BY WELL; OIL WELLS BY WELL OR BY LEASE. IF REPORTING OIL PRODUCTION BY LEASE, ATTACH A LIST CONTAINING THE PURCHASER NUMBER AND ALL PERTINENT NUMBERS. THE PURCHASER NUMBER IS ASSIGNED TO THE LEASE BY THE PURCHASER FOR PRODUCTION PAYMENT. THE REPORTING OF PRODUCED GAS IS OPTIONAL.

PERMIT #: _____	PURCHASER #: _____	IF BY LEASE, NUMBER OF WELLS: _____			
FARM NAME: _____		COUNTY: _____			
PRODUCTION FORMATION(S): _____					
	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

PERMIT #: _____	PURCHASER #: _____	IF BY LEASE, NUMBER OF WELLS: _____			
FARM NAME: _____		COUNTY: _____			
PRODUCTION FORMATION(S): _____					
	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

PERMIT #: _____	PURCHASER #: _____	IF BY LEASE, NUMBER OF WELLS: _____			
FARM NAME: _____		COUNTY: _____			
PRODUCTION FORMATION(S): _____					
	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

PERMIT #: _____ PURCHASER #: _____ IF BY LEASE, NUMBER OF WELLS: _____
 FARM NAME: _____ COUNTY: _____
 PRODUCTION FORMATION(S): _____

	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

PERMIT #: _____ PURCHASER #: _____ IF BY LEASE, NUMBER OF WELLS: _____
 FARM NAME: _____ COUNTY: _____
 PRODUCTION FORMATION(S): _____

	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

PERMIT #: _____ PURCHASER #: _____ IF BY LEASE, NUMBER OF WELLS: _____
 FARM NAME: _____ COUNTY: _____
 PRODUCTION FORMATION(S): _____

	PRODUCED GAS (MCF)	NET SALES GAS (MCF)	NET SALES OIL (BBLs)	STATUS	
				PR	SI
JAN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
FEB	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
APR	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
MAY	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUN	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
JUL	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
AUG	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
SEP	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
OCT	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
NOV	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
DEC	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	_____	_____	_____		

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS THAT THE FOREGOING INFORMATION GIVEN ON THIS REPORT IS TRUE AS HEREIN SET FORTH.

DATED THIS _____ DAY OF _____, 20_____.

SIGNATURE OF OPERATOR

TITLE

PRINT OR TYPE SIGNATURE

FORM ED-17 9REV. 2-99)

INSTRUCTIONS FOR COMPLETING "THE ANNUAL REPORT OF MONTHLY PRODUCTION"

OPERATORS MUST **DATE** AND **SIGN** THE BACK OF THE PRODUCTION FORM WHEN COMPLETED. PRODUCTION DATA FOR THE PREVIOUS YEAR IS TO BE FILED IN THE LEXINGTON OFFICE OF THE DIVISION OF OIL AND GAS BY APRIL 15.

NATURAL GAS:

NATURAL GAS PRODUCTION SHALL BE REPORTED ON A PER WELL BASIS.

PERMIT NUMBER:	COMPLETE WITH THE PERMIT NUMBER ISSUED BY THE DIVISION OF OIL AND GAS.
PURCHASER NUMBER:	NUMBER ASSIGNED BY THE PURCHASING COMPANY.
FARM NAME:	COMPLETE WITH INDIVIDUAL WELL NAME AND WELL NUMBER.
PRODUCING FORMATION:	IF COMMINGLED AND NOT METERED SEPARATELY, THEN LIST AS "COMMINGLED" AND LIST THE PERTINENT FORMATIONS.
PRODUCED GAS:	ACTUAL GAS PRODUCED. INDICATE THE AMOUNT OF GAS METERED OR PRO-RATED AT THE WELL HEAD ON A MONTHLY BASIS.
NET GAS SALES:	ACTUAL GAS SOLD. INDICATE THE AMOUNT OF GAS SOLD INTO THE LINE OF FIRST PURCHASE. COULD BE DIFFERENT FROM PRODUCED GAS DUE TO LINE LOSS AND COMPRESSOR USAGE.
STATUS:	CHECK EITHER "PRODUCING" OR "SHUT-IN" FOR THE MONTH REPORTED.

COMBINATION GAS/OIL WELL:

SAME AS NATURAL GAS REPORTING BUT INCLUDE THE OIL SALES ON A MONTHLY BASIS.

CRUDE OIL:

CRUDE OIL PRODUCTION MAY BE REPORTED BY INDIVIDUAL WELL OR BY LEASE. WHEN REPORTING BY LEASE, IDENTIFY THE PURCHASER (LEASE) NUMBER USED BY THE CRUDE OIL PURCHASER. PERMIT NUMBERS WHICH CORRESPOND TO THE PURCHASER (LEASE) NUMBER SHALL BE LISTED ON A SEPARATE SHEET OF PAPER AND ATTACHED TO THE PRODUCTION FORM.

EXAMPLE

PURCHASER(LEASE) NUMBER: 12345 PERMIT NUMBERS: 85000, 85001, 85002.

**COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS**

P. O. Box 2244
Frankfort, KY 40602
Phone: (502) 573-0147 Fax: (502) 573-1099
http://oilandgas.ky.gov



Casing and Cementing Plan as
Required for Permit per 805 KAR
1:130 and 805 KAR 1:140

WELL OPERATOR (APPLICANT) _____
(MUST BE IDENTICAL TO NAME ON BOND)

MINERAL OWNER (LESSOR) _____

Street City
COUNTY _____ WELL NUMBER _____ ELEVATION _____

Farm Name: _____ Well Number: _____ County: _____

Carter FNL FEL
Coordinates: FSL FWL SEC _____ LTR _____ NO. _____

CASING INFORMATION

TYPE	OD SIZE	WT/FT GRADE NEW OR USED	DEPTH

CEMENT INFORMATION

CASING	HOLE SIZE	SACKS	CLASS	WEIGHT	ADDITIVES

BLOW-OUT PREVENTER INFORMATION

BRAND	TYPE	WORKING PRESSURE	TEST PRESSURE

SCHEMATIC SHOWING HOLE SIZE & DEPTH OF EACH CASING STRING

I CERTIFY THAT THE ABOVE INFORMATION IS TRUE, ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

OPERATOR: _____ DATE SIGNED _____

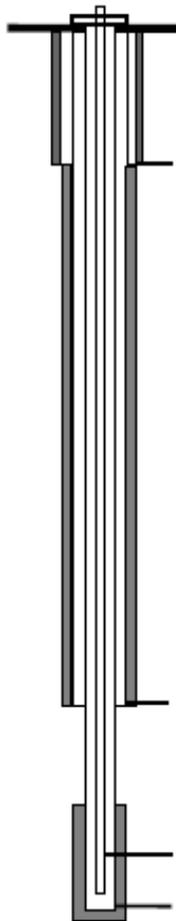
The Director of the Division of Oil and Gas, Department for Natural Resources, hereby approves of this Casing and Cementing Plan for the above-referenced location.

DIRECTOR: _____ DATE SIGNED: _____

FORM ED-7 (ORG. 8-91) (REV. 10/07)

OIL & GAS WELL CEMENTING

Typical Wellbore (Not to Scale)



Surface Casing String - Set through fresh water zones and coal seams.

9 5/8" Casing (32.3 LB/FT) Length-250 FT.-Hole Size 12 1/4"

Cement to Surface: 250 X .3132 cu.ft./ft.=78.3 cu.ft.

***Convert Cubic Feet to Sacks: 78.3 cu.ft./1.18 cu.ft./sack=66.367 sacks**

Convert Cubic Feet to Barrels: 78.3 X .1781=13.9 Barrels

Intermediate Casing String - Set to isolate water and shallow producing zones.

7" Casing (20 LB/FT) Length-1800 FT.-Hole Size 8 1/4"

Cement back to base of 9 5/8": 1800'-250'=1550' 1550 X .1783 cu.ft./ft.=276 cu.ft.

***Convert Cubic Feet to Sacks: 276 cu.ft./1.18 cu.ft./sack=233.94 sacks**

Convert Cubic Feet to Barrels: 276 X .1781=49.16 Barrels

2 3/8" Production Tubing

Production Casing String - Set through producing zone and perforated.

4 1/2" Casing (10.5 LB/FT) Length-3750 FT.-Hole Size 6 1/4"

Cement up to 2800': 3750'-2800'=950' 950 X .1026 cu.ft./ft.=97.47 cu.ft.

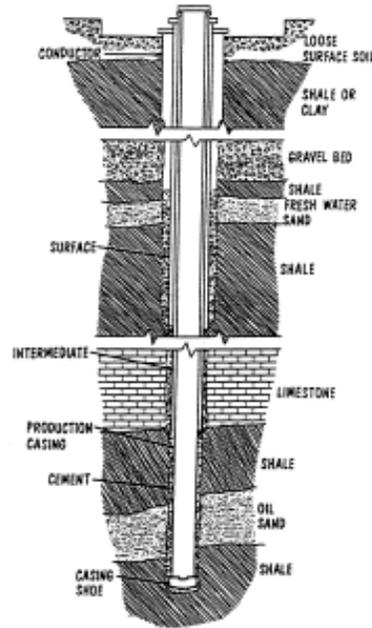
***Convert Cubic Feet to Sacks: 97.47 cu.ft./1.18 cu.ft./sack=82.6 sacks**

Convert Cubic Feet to Barrels: 97.47 X .1781=17.36 Barrels

* To convert cubic feet to sacks divide cement yield into cubic feet. To calculate sacks the cement blend, weight, yield, and water is required (supplied by cementing service company). Class A Cement w/3% CaCl₂ has a yield of 1.18 cu.ft./sack.

NOTE: Data for annular volume between casing and/or open hole is required for cement calculations and is found in oilfield cementing handbook. Contact cementing service company to obtain handbook.

 Represents cement in annular space between casing and open hole.



—Types of casing.

**OIL & GAS WELL
CASING INFORMATION**

-Types and functions of casing strings used in wells

Type of Casing	Sizes	Function
Conductor Cement- API Class A-C-G or H with accelerator	Ranges from 16- to 30- inch driven or set from 40 to 1500 foot depths	<ol style="list-style-type: none"> 1. Stabilized cellar and protects rig foundation 2. Restrains unconsolidated formations 3. Confines circulating fluids 4. Helps prevent water flows and loss of circulation
Surface Same as Conductor	Ranges from 7- to 16-inch, set from few feet to 4500 foot depths	<ol style="list-style-type: none"> 1. Helps prevent contamination of fresh-water zones 2. Connection for blow-out preventer and well head 3. Support for deeper casing and tubing string 4. Confines shallow zones and helps prevent loss of circulation
Intermediate Cement- API Class A-C-G or H containing bentonite Lower casing with high strength cement	Ranges from 7- to 11 3/4 inch.	<ol style="list-style-type: none"> 1. Helps prevent hole sloughing or enlargement while drilling deeper 2. Protects production strings from corrosion 3. Confines well if mud weight becomes inadequate to restrain high formation pressure 4. Protects loss of drill string in key seat or "sticky" holes 5. Helps prevent loss of circulation.
Production Cement- Designed for weight control (hydrostatic). Lower casing with high strength cement	Ranges from 2 3/4 inch to 9 3/4 inch and extends through zone of production	<ol style="list-style-type: none"> 1. Protects hole during life of well 2. Isolates and helps prevent fluid migration 3. Helps provide well control should tubing fail 4. Protects downhole equipment 5. Allows selective production of oil or gas.
Liner Same as production casing	5- to 7-inch are most common sizes, extends through productive zones	<ol style="list-style-type: none"> 1. Same as for production casing 2. Limits need for running full string of casing

COMMONWEALTH OF KENTUCKY
 DEPARTMENT FOR NATURAL RESOURCES
 DIVISION OF OIL AND GAS
 P. O. BOX 2244
 FRANKFORT, KY 40602
 PHONE: 502 573-0147

CERTIFICATE OF COMPLETION FOR AN INJECTION WELL

- 1) Permit No: _____ (A copy of well location plat must be attached)
- 2) Operator (name and address) _____
- 3) Lease Name _____ Well No. _____
 FNL FEL
- 4) Carter Coordinate _____ FSL FWL Section _____ Letter _____ Number _____
- 5) County _____ Elevation _____ Total Depth _____
- 6) The casing program for the above identified well is as follows:

Casing Size	New or Used	No. Sacks Cement	Cement Column -Top to Bottom
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
- 7) Injection shall be accomplished through tubing and packer as described below.

Size of Tubing	Type of Packer	Packer Depth
_____	_____	_____
_____	_____	_____
_____	_____	_____
- 8) Was cement bond log run? YES NO If yes, attach one copy.
- 9) Maximum anticipated injection pressure at well head _____ psi.
- 10) Maximum anticipated injection volume _____ (bbls) (cu.ft.) per day.
- 11) The injection zone is known as the (geological name) _____, and this formation occurs in this well from _____ to _____.
- 12) a. The _____ size casing has been cemented to a depth of _____ and the perforated interval is from _____ to _____ with _____ number of perforations.
 b. The injection interval is through an open hole and porous strata below the injection interval has not been drilled or is plugged back with a column of cement from _____ to _____.
- 13) Describe in detail the monitoring method for the annulus between the injection tubing and the next string of casing. Identify the type of instrument to be used and the time interval between observations by a responsible party. Records of monitoring must be kept on file by the operator and available to the Division of Oil and Gas upon request. (Use additional pages if needed.)
- 14) I, the operator of the above identified well, certify that the above information is accurate and correct and that I further certify that I have run the following mechanical integrity test(s) of the installation to insure there are no leaks in the system. (Describe each test fully) (Use additional pages if needed) (Test Pressure must exceed the maximum anticipated injection pressure listed on line 9 by at least 100 psi).

Certified by _____ (Operator's signature only)

Date _____ Name of signee _____

FORM ED-23

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. BOX 2244
Frankfort, Kentucky 40602

CERTIFICATE OF COMPLETION FOR AN INJECTION WELL

Attachment For Question #13

Use this attachment sheet to provide the information for question number 13:

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. BOX 2244
Frankfort, Kentucky 40602

CERTIFICATE OF COMPLETION FOR AN INJECTION WELL

Attachment For Question #14

Use this attachment sheet to provide the information for question number 14:

DEPARTMENT FOR NATURAL RESOURCES
 DIVISION OF OIL AND GAS
 P. O. BOX 2244
 FRANKFORT, KY 40602
 Phone: (502) 573-0147



**Operator Certification of
 Formation Offset
 and Vertical Depth**

Operator Name _____ Permit Number _____
 Mineral Owner (Lessor) _____ Well Number _____
 FNL FEL
 Carter Coordinate _____ FSL _____ FWL Section _____ Letter _____ Number _____

Lateral offset in feet from the wellsite to the top of the formation and the bottom (target) of the formation and the true vertical depth:

FORMATION NAME	LATERAL OFFSET TOP OF FM.	TRUE VERTICAL DEPTH TOP OF FM.	LATERAL OFFSET BOTTOM OF FM. OR TARGET	TRUE VERTICAL DEPTH BOTTOM OF FM OR TARGET
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Lateral offset to coal seam(s) and true vertical depth if drilling directionally or horizontally through a coal seam:

LATERAL OFFSET TOP OF COAL SEAM	TRUE VERTICAL DEPTH TOP OF COAL SEAM	LATERAL OFFSET BOTTOM OF COAL SEAM	TRUE VERTICAL DEPTH BOTTOM OF COAL SEAM
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

I CERTIFY THAT THE INFORMATION ON THIS FORM IS ACCURATE AND TRUE TO THE BEST OF MY KNOWLEDGE.

OPERATOR SIGNATURE _____ TITLE _____
 DATE _____

FORM ED-8 (ORIG. 8/91) (REV. 2/99)

COMMONWEALTH OF KENTUCKY

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P.O. BOX 2244
FRANKFORT, KY 40602
PHONE (502) 573-0147
FAX (502) 573-1099
http://oilandgas.ky.gov

FOR OFFICE USE ONLY
RECORD NO _____
FEE _____
ATTACHED MAP _____
DATE RECEIVED _____

**NOTIFICATION/APPLICATION FOR A GATHERING LINE PERMIT:
INSTALLATION, RECLAMATION AND OPERATION PLAN
(ATTACH TOPOGRAPHIC MAP, IF APPLICABLE)**

Application Type:

- Notification Application for New Permit Permit Modification Transfer of Gathering Line Permit
(No fee required) (No fee required)

Type of Operation:

- Oil Production Flow Line Gas Production Flow Line Gathering Line (other than oil or gas production flow line)
(Include \$100 permit fee, if new) (Include \$200 permit fee, if new) (Include \$500 permit fee, if new)

If an oil or gas production flow line or a permit modification of such, list the associated well permit number _____

If a permit modification or transfer of a gathering line permit, list the gathering line permit number _____

Operator Information
Operator Name _____ Telephone Number _____
Address _____ City _____ State _____ Zip _____
Email Address _____
Registered Agent Information
Agent _____ Telephone Number _____

Surface Owner Information
Name _____ Telephone Number _____
Address _____ City _____ State _____ Zip _____
Attach additional sheet(s) for additional names and addresses, if applicable.

If Transfer:
Successor Name _____ Telephone Number _____
Address _____ City _____ State _____ Zip _____
Email Address _____
Registered Agent Information
Agent _____ Telephone Number _____

Location of Gathering Line:
County(s) _____ Quadrangle(s) _____

Type(s) of Pipeline: Gas Oil Gathering Line Material: Steel Plastic

Total length of proposed gathering line _____ feet. Provide details below.

Pipeline Size _____ Inches Length of Proposed Pipeline _____ feet Anticipated operating pressure _____ psig
Pipeline Size _____ Inches Length of Proposed Pipeline _____ feet Anticipated operating pressure _____ psig
Pipeline Size _____ Inches Length of Proposed Pipeline _____ feet Anticipated operating pressure _____ psig

A narrative description of the location of all areas to be disturbed, including the location of roads, any existing gathering lines, the well site, tanks or other storage facilities:

Describe steps to be taken to prevent erosion and sedimentation from the disturbed area along the gathering line route:

Proposed revegetation treatment, including fertilizers and soil amendments, seed or trees to be planted, and the types and amounts per acre of seed and trees to be planted:

Narrative of operator's plan for the timely and effective reclamation of all disturbed areas:

Does the operator have the authority (deed, lease, right-of-way) necessary to install and operate the gathering line? YES NO

Does the operator maintain general liability insurance coverage which includes its gathering line operations? (Required by 805 KAR 1:190, with Division of Oil and Gas listed as "certificate holder" on the policy) YES NO

Is this proposed gathering line on, or will it be necessary to cross, land which is currently under permit or bond required by KRS Chapter 350? YES NO

If yes, list the name and address of current bonded operator:

Has the applicant met and conferred with, or offered to meet and confer with, the bonded operator? YES NO

THE UNDERSIGNED HEREBY AFFIRMS THAT HE HAS EXECUTED ANY NECESSARY RIGHT-OF-WAY OR LEASE AGREEMENT WITH THE SURFACE OWNER AND AFFIRMS THAT THE FOREGOING FACTS SET OUT IN THIS APPLICATION ARE TRUE.

DATED THIS _____ DAY OF _____, 20__

IF A CORPORATION, SIGNATORY MUST BE AN OFFICER OF THE CORPORATION OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS. IF A PRIVATE INDIVIDUAL, SIGNATORY MUST BE SAME OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS.

SIGNATURE OF APPLICANT / TITLE

PRINT OR TYPE NAME OF APPLICANT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20__

NOTARY PUBLIC
MY COMMISSION EXPIRES: _____

If Transfer of Gathering Line Permit, successor signatory:

SIGNATURE OF SUCCESSOR / TITLE

PRINT OR TYPE NAME OF SUCCESSOR

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20__

NOTARY PUBLIC
MY COMMISSION EXPIRES: _____

KENTUCKY DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P.O. BOX 2244
FRANKFORT, KY 40602-2244
(502) 573-0147

Application – Gathering Line Operator’s License

1. In order to keep your license current, provide the following information and sign. **PLEASE PRINT CLEARLY.**
2. **Your gathering line operator’s license shall be renewed every year.** The cost of this renewal is **\$100.00 or \$25.00** if you are an operator who is operating one gas well used strictly for the purpose of heating a residential dwelling.
3. Enclose a personal check, certified check, cashier’s check, or money order payable to the **Kentucky State Treasurer** in the appropriate amount. Please do not send cash.
4. Return this form and your fee to the address shown above.

Operator Name: _____ Home Phone # _____
Address: _____
Street, Route or Box Number

City State Zip Code E-mail Address

If a Partnership or Corporation:

Principal Officer	Address

DATED THIS _____ DAY OF _____, 20____

IF A CORPORATION, SIGNATORY MUST BE AN OFFICER OF THE CORPORATION OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS. IF A PRIVATE INDIVIDUAL, SIGNATORY MUST BE SAME OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS.

Signature of Applicant Title

Print or type name of Applicant

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____ 20_____.

Notary Public

MY COMMISSION EXPIRES: _____

Attach: Drawing(s) of the road, well location and proposed area involved, drawn over an enlarged section of the U.S.G.S. 1=24,000 topographic map (enlarged to approximately 1"=400') on an 8x14 sheet of paper using the applicable symbols from the following legend:

LEGEND

Stream 	Gathering Lines 
Road 	Diversion 
Existing Fence 	Spring 
Planned Fence 	Drain pipe with size in inches 
Open Ditch 	Waterway 
Rock 	Cross Drain 
North Arrow 	Artificial Filter Strip 
Buildings 	Pit: Cut Walls 
Water Wells 	Pit: Compacted Fill Walls 
Tanks 	Area for Land Application of Pit Waste 
Drill Site 	Storage Facilities 

The undersigned hereby swears or affirms that the foregoing information and attachments in this plan to prevent erosion of and sedimentation from the well site and all disturbed areas, including roads, are true to the best of my knowledge and belief.

Date this _____ day of _____, 20____.

If a corporation, signatory shall be an officer of the company or provide Power of Attorney to execute documents. If a private individual, signatory shall be the same as the applicant or provide Power of Attorney to execute documents.

Signature of Operator Title

Print or Type Name

Sworn to and subscribed before me this _____ day of _____, 20____.

My Commission Expires: _____ Notary Public

Surface Owner Agreement

(Surface Owner Signature Below, Shall Be Notarized)

I have reviewed the application and the information submitted with this form, and agree to the well operator's operations and reclamation proposal as set forth herein. I understand that the execution of this document in no way affects compensation for surface damages as described in KRS 353.595(6) or other contractual agreement.

Signature of Severed Mineral Surface Owner Date

Print or Type the Name of Severed Mineral Surface Owner

Sworn to and subscribed before me this _____ day of _____, 20____.

My Commission Expires: _____ Notary Public

PLAN TO PREVENT EROSION OF AND SEDIMENTATION FROM A WELL SITE
CONTINUATION PAGE FOR ADDITIONAL PROPOSED REVEGETATION TREATMENTS

Operator Name _____ County _____
Surface Owner Name, _____
Address and Phone No. _____
Surface Owner Name _____ Phone No. _____

Fertilizer and Soil Amendments	Seed or Trees Planted (Type and Amount/Acre)
Area 3 _____ _____ _____ _____	_____ _____ _____ _____
Area 4 _____ _____ _____ _____	_____ _____ _____ _____
Area 5 _____ _____ _____ _____	_____ _____ _____ _____
Area 6 _____ _____ _____ _____	_____ _____ _____ _____
Area 7 _____ _____ _____ _____	_____ _____ _____ _____
Area 8 _____ _____ _____ _____	_____ _____ _____ _____
Area 9 _____ _____ _____ _____	_____ _____ _____ _____
Area 10 _____ _____ _____ _____	_____ _____ _____ _____
Area 11 _____ _____ _____ _____	_____ _____ _____ _____
Area 12 _____ _____ _____ _____	_____ _____ _____ _____

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. BOX 2244
FRANKFORT, KY 40602
PHONE: 502-573-0147

APPLICATION FOR PERMIT FOR USE OF VACUUM

OPERATOR: _____

ADDRESS: _____

E-MAIL: _____

LEASE NAME: _____

COUNTY: _____

Well No.	Carter Coordinate Spot Locations	Permit No.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Are there any producing wells on premises within one thousand feet of the above listed wells owned by an operator other than yourself? Yes No

Offset operators to whom notice has been given:

Type of unit to be installed:

Formation to which vacuum is to be applied: _____

I hereby certify the above information is correct to the best of my knowledge.

Signature of Applicant

INSTRUCTIONS: Use a separate application form for each lease. Only one copy need be filed. If Carter Coordinate locations cannot be furnished, the wells may be shown on a 7-1/2 minute topographic map and attached to this application. The map will be returned upon request.

FORM ED-9 (REV2/99)

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. Box 2244
Frankfort, KY 40602
Phone: (502) 573-0147 Fax: (502) 573-1099
<http://oilandgas.ky.gov>
(TYPE OR PRINT IN INK)



**AFFIDAVIT TO TIME AND MANNER OF
PLUGGING AND FILLING WELL
AS REQUIRED BY LAW**

NAME AND ADDRESS OF LAST OPERATOR _____
E-MAIL ADDRESS OF LAST OPERATOR _____
NAME AND ADDRESS OF ORIGINAL OPERATOR _____
E-MAIL ADDRESS OF ORIGINAL OPERATOR _____
NAME AND ADDRESS OF COAL OPERATOR _____
E-MAIL ADDRESS OF COAL OPERATOR _____
PERMIT NO. _____ ELEVATION _____ COUNTY _____ TOTAL DEPTH _____
CARTER COORDINATES _____ FNL FEL _____ FSL FWL SEC _____ LETTER _____ NUMBER _____
FARM OWNER (LESSOR) _____ WELL NUMBER _____

AFFIDAVIT TO BE MADE IN TRIPPLICATE, ONE COPY TO BE MAILED TO THE DIVISION OF OIL AND GAS, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD TO BE MAILED BY REGISTERED MAIL TO EACH COAL OPERATOR NAMED AT THEIR RESPECTIVE ADDRESSES.

AFFIDAVIT

STATE OF KENTUCKY,
COUNTY OF _____ } SS:

_____, OPERATOR OF THE ABOVE CAPTIONED WELL DOES HEREBY SWEAR THAT THE PLUGGING OF SAID WELL WAS COMPLETED ACCORDING TO INSTRUCTIONS FROM THE OIL AND GAS INSPECTOR AND ACCORDING TO CHAPTER 363 OF THE KENTUCKY REVISED STATUTES ON _____ RECORD OF WHICH IS LISTED BELOW OR SHOWN ON THE BACK OF THIS FORM.

(PLUGGED DATE) (BOTTOM)	(TOP)	(PLUG DESCRIPTION)
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____
PLUGGED: FROM _____ TO _____		WITH _____

INDICATE BELOW THE SIZE AND INTERVAL OF ALL CASING LEFT IN THE WELL AND IF AND WHERE IT WAS SHOT OFF:

CASING SIZE _____, INTERVAL _____, SHOT OFF AT _____ BOTTOM OF CASING AT _____
CASING SIZE _____, INTERVAL _____, SHOT OFF AT _____ BOTTOM OF CASING AT _____
CASING SIZE _____, INTERVAL _____, SHOT OFF AT _____ BOTTOM OF CASING AT _____

IF CASING WAS NOT LEFT IN THE WELL, INDICATE THE BORE HOLE SIZE AND INTERVAL:

CASING SIZE _____ INTERVAL _____
CASING SIZE _____ INTERVAL _____

(OPTIONAL) SIGNATURE OF CONTRACTOR RESPONSIBLE FOR ABOVE PLUGGING _____ TITLE _____

(REQUIRED) SIGNATURE OF CONTRACTOR RESPONSIBLE FOR ABOVE PLUGGING _____ TITLE _____

SWORN TO AND SUBSCRIBED BEFORE ME THIS DATE _____ DAY OF _____, 20_____

Notary Public

MY COMMISSION EXPIRES: _____
FORM ED-38 (REV. 10/07)

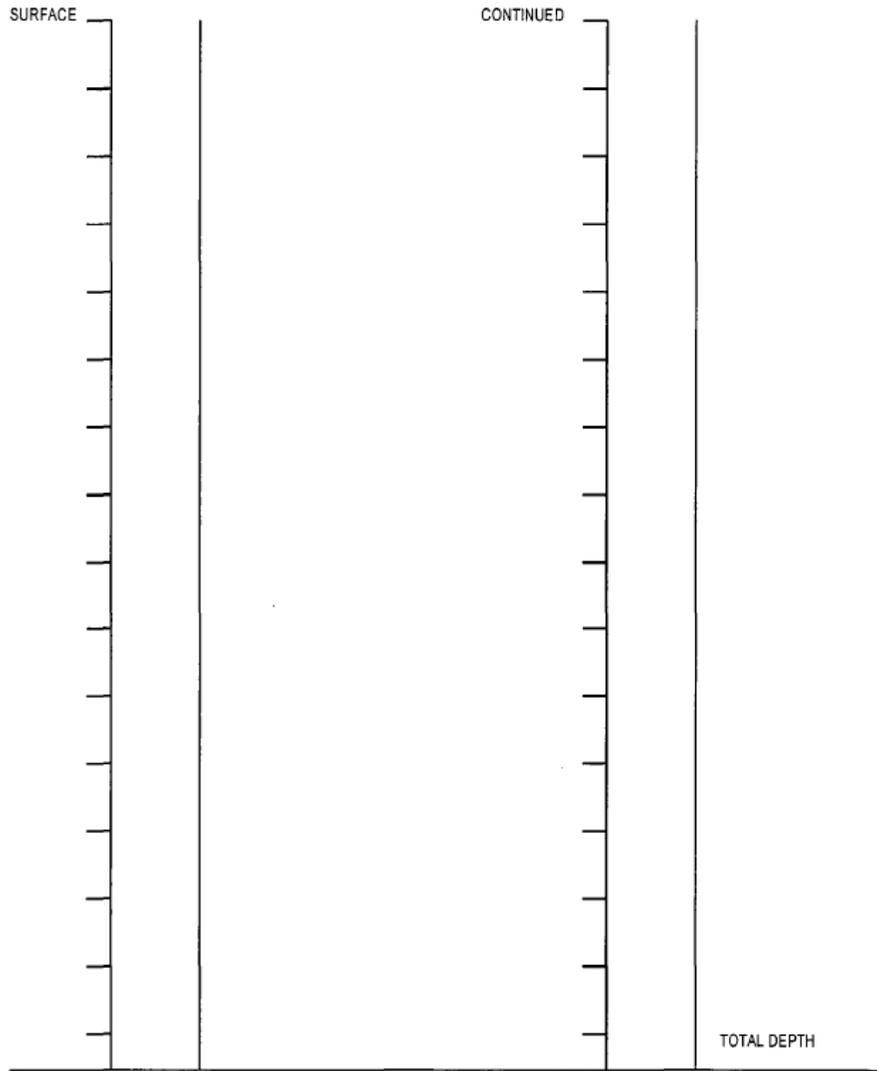
CONTINUED

CEMENT TABLE

HOLE SIZE	2"	3"	4"	5"	6 1/2"	8"	8 1/2"	8 3/4"	10"	12"	16"
NO. FT. FILLED PER SACK OF CEMENT*	45'	20'	11'	7'	4'	2 3/4'	2 1/2'	2 1/3'	2'	1'	1/2'

*1 CUBIC FOOT PER SACK

GRAPHICALLY SHOW BELOW THE LOCATION AND INTERVAL OF ALL PLUGS INSTALLED.



IF THE WELL IS TO BE LEFT AS A DOMESTIC WATER WELL, PLUG ACCORDING TO THE INSPECTOR'S INSTRUCTIONS, COMPLETE THIS FORM ON BOTH SIDES AND HAVE THE FOLLOWING AFFIDAVIT SIGNED BY THE REAL ESTATE OWNER.

AFFIDAVIT

I, _____, THE OWNER OF THE REAL ESTATE ON WHICH THIS WELL WAS DRILLED, DESIRE THAT THE WELL BE LEFT OPEN FROM THE FRESH WATER ZONE TO THE SURFACE FOR USE AS A WATER WELL AND DO HEREBY ACCEPT THE FULL RESPONSIBILITY FOR SAID WATER WELL. THE OIL OPERATOR REMAINS RESPONSIBLE FOR ALL PLUGS BELOW THE FRESH WATER ZONE.

SIGNATURE OF OWNER OR HIS AGENT

DATE

DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. BOX 2244
FRANKFORT, KY 40602
Phone: (502) 573-0147



TEMPORARY ABANDONMENT PERMIT

PERMIT NO. _____

OPERATOR: _____

ADDRESS: _____

E-MAIL: _____

LEASE (FARM): _____ WELL NO. _____

LOCATION: _____ FNL _____ FEL
 FSL _____ FWL _____ SEC. _____ LTR. _____ NO.

COUNTY: _____ TOTAL DEPTH: _____

CASING SIZE: _____ CASING DEPTH _____

CASING CEMENTED WITH _____ BAGS OF CEMENT: FROM _____ TO _____

CASING IS SEALED AT TOP BY: _____

THE REASON FOR A REQUEST FOR TEMPORARY ABANDONMENT IS:

THE LEASE ON THIS PROPERTY EXPIRES: _____

THE AMOUNT OF TIME NEEDED FOR THIS TEMPORARY ABANDONMENT PERMIT: _____

I, THE OPERATOR OF THE ABOVE NAMED LEASE, HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE ON THIS DATE, AND REQUEST A TEMPORARY ABANDONMENT PERMIT BE APPROVED.

OPERATOR'S SIGNATURE TITLE
(IF AN INDIVIDUAL) (IF A CORPORATION, THE SIGNEE MUST GIVE A POSITION TITLE.)

THIS TEMPORARY ABANDONMENT PERMIT IS APPROVED AND SHALL EXPIRE: _____

INSPECTOR, DIVISION OF OIL AND GAS

FORM ED-12 (REV. 2-99)

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
POST OFFICE BOX 2244
FRANKFORT, KY 40601
PHONE: 502-573-0147
http://oilandgas.ky.gov

FOR OFFICE USE ONLY	
RECORD NO.	_____
FEE:	_____

APPLICATION FOR TESTING PERMIT

APPLICANT NAME: _____

PERMANENT ADDRESS: _____

ADDRESS FOR MAILING PERMIT: _____

IDENTIFICATION OF WELL TO BE TESTED:

PERMIT #: _____ COUNTY: _____ WELL #: _____
MINERAL OWNER: _____

CARTER COORDINATES: _____ FNL _____ FEL _____
FSL _____ FWL, SEC _____ LTR _____ NUMBER _____

IS THERE A COMPLETE SEVERANCE OF THE OWNERSHIP OF THE OIL AND GAS FROM THE OWNERSHIP OF THE SURFACE AREA TO BE DISTURBED BY THE INVESTIGATION? _____ YES _____ NO
(IF YES, THEN THE APPLICANT MUST FULFILL THE REQUIREMENTS OF 805 KAR 1:170.)

BY WHAT RIGHT DO YOU HAVE TO ENTER THE PROPERTY UPON WHICH THIS WELL IS LOCATED?

DESCRIBE THE METHODS FOR INVESTIGATION: _____

THE APPLICANT ACKNOWLEDGES OTHER LOCAL, STATE AND FEDERAL LAWS MAY APPLY TO THE TESTING OF THIS WELL.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS THE FOREGOING FACTS GIVEN IN THIS APPLICATION ARE TRUE AS THEREIN SET FORTH. DATED THIS _____ DAY OF _____, _____.

IF A CORPORATION, SIGNATORY MUST BE AN OFFICER OF THE COMPANY OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS. IF A PRIVATE INDIVIDUAL, SIGNATORY MUST BE SAME OR PROVIDE POWER OF ATTORNEY TO EXECUTE DOCUMENTS.

SIGNATURE OF APPLICANT TITLE

PRINT OR TYPE NAME OF APPLICANT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, _____

MY COMMISSION EXPIRES: _____, _____
NOTARY PUBLIC

THIS PERMIT DOES NOT AUTHORIZE ANY DRILLING.



COMMONWEALTH OF KENTUCKY
 DEPARTMENT FOR NATURAL RESOURCES
 DIVISION OF OIL AND GAS
 P O BOX 2244
 FRANKFORT, KENTUCKY 40602-2244
<http://oilandgas.ky.gov>
 (type or print in ink)



**TESTING PERMIT
 REPORT OF INVESTIGATION**

<p>WELL IDENTIFICATION</p> <p>PERMIT NUMBER _____</p> <p>OPERATOR _____</p> <p>FARM NAME _____</p> <p>WELL NO. _____</p> <p>COUNTY _____</p> <p>SEC _____ LTR _____ NO _____</p> <p>_____ FNL _____ FEL _____</p> <p>_____ FSL _____ FWL _____</p> <p>WATER ENCOUNTERED (FRESH, SALT)</p> <p>TYPE _____ FROM _____ TO _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>GEOPHYSICAL LOGS RUN (AS REQUIRED BY KRS 353.550(2)) (GAMMA RAY, NEUTRON, DENSITY, INDUCTION, TEMP.)</p> <p>TYPE _____ FROM _____ TO _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>TOTAL DEPTH _____</p> <p>CASING DATA</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%;">CASING SIZE</td> <td style="width:25%;">HOLE SIZE</td> <td style="width:25%;">DEPTH</td> <td style="width:25%;">SACKS</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table> <p>CEMENT YIELD IN CUBIC FEET/SACK _____</p>	CASING SIZE	HOLE SIZE	DEPTH	SACKS	_____	_____	_____	_____	_____	_____	_____	_____	<p>COMPLETION SERVICES</p> <p>PERFORATIONS OR OPEN HOLE (PLEASE INDICATE BY CIRCLING)</p> <p>FORMATION _____ INTERVAL _____</p> <p>FORMATION _____ INTERVAL _____</p> <p>WELL TREATMENT</p> <p>TYPE TREATMENT _____</p> <p>ACID (BBLS) _____</p> <p>TOTAL _____</p> <p>FLUID (BBLS) _____ TOTAL _____</p> <p style="padding-left: 100px;">SAND (LBS) _____</p> <p>NITROGEN _____ SCF _____</p> <p>ADDITIONAL CEMENTING</p> <p>SQUEEZE CEMENT SACKS _____ INTERVAL _____</p> <p>PLUG BACK SACKS _____ INTERVAL _____</p> <p>TEST VOLUMES</p> <p>GAS _____ MCF DATE _____</p> <p>AGAINST BACKPRESSURE OF _____ PSI</p> <p>OIL _____ BOPD DATE _____</p> <p>AGAINST BACKPRESSURE OF _____ PSI</p> <p>LIST SPECIALIZED TESTS (DST'S, FILL-UP TESTS)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:70%;">FORMATION NAME</td> <td style="width:30%;">INTERVAL</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table>	FORMATION NAME	INTERVAL	_____	_____
CASING SIZE	HOLE SIZE	DEPTH	SACKS														
_____	_____	_____	_____														
_____	_____	_____	_____														
FORMATION NAME	INTERVAL																
_____	_____																

SIGNATURE OF OPERATOR _____ TITLE _____ DATE _____

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20_____

MY COMMISSION EXPIRES: _____, _____

NOTARY PUBLIC

TESTING PERMIT
REPORT OF INVESTIGATION

Page 2

PERMIT NUMBER _____

CTRL#	_____
OPERATOR NUMBER:	_____
BOND NUMBER:	_____

I REQUEST THIS WELL TO BE TRANSFERRED TO OUR BOND:
(IF YES, PLEASE SIGN BELOW)

YES

NO

ATTEST: I, THE UNDERSIGNED, SUCCESSOR TO THE WELL LISTED ON THE REVERSE OF THIS DOCUMENT,
REQUEST THE DIVISION OF OIL AND GAS, DEPARTMENT FOR NATURAL RESOURCES TO TRANSFER AND
PLACE THIS WELL UNDER MY BOND. THEREBY, I AM ASSUMING COMPLETE RESPONSIBILITY FOR IT UNDER
KRS CHAPTER 353 AND THE RULES AND REGULATIONS PROMULGATED THEREUNDER.

SIGNATURE OF OPERATOR

DATE

FORMATION RECORD

FROM	TO	ROCK TYPE (DESCRIBE ROCK TYPES AND OTHER MATERIALS PENETRATED AND RECORD OCCURENCES OF OIL, GAS AND WATER FROM SURFACE TO TOTAL DEPTH.)	FROM	TO	ROCK TYPE (DESCRIBE ROCK TYPES AND OTHER MATERIALS PENETRATED AND RECORD OCCURENCES OF OIL, GAS AND WATER FROM SURFACE TO TOTAL DEPTH.)

AFFIDAVIT

_____, OPERATOR OF THE WELL CAPTIONED AS
PERMIT NUMBER _____ DOES HEREBY SWEAR THAT THE DEPTH OF THE WELL IS ACCURATE
 AND CORRECT AND DOES NOT EXCEED THE **PERMITTED DEPTH** OF _____.

SIGNATURE OF OPERATOR _____ TITLE _____ DATE _____

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 20_____.

 NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
POST OFFICE BOX 2244
FRANKFORT, KY 40601



ISSUER

NAME

ADDRESS

E-MAIL

PHONE

CONTACT

IN REFERENCE TO:

LETTER OF CREDIT NUMBER _____
DATED _____
AMOUNT _____
ISSUED BY _____
ACCOUNTANT PARTY – OPERATOR _____

WE ENCLOSE THE ORIGINAL OF THE ABOVE-REFERENCED LETTER OF CREDIT OPENED IN YOUR FAVOR.

WE CONFIRM THE CREDIT AND HEREBY UNDERTAKE THAT ALL DRAFT(S) OR OTHER DEMANDS DRAWN IN COMPLIANCE WITH TERMS OF THE ORIGINAL CREDIT AND ANY OTHER CONDITIONS STATED THEREIN, SHALL BE HONORED.

BY: _____

TITLE: _____

KentuckyUnbridledSpirit.com
ED-16 (REV 03/05)



An Equal Opportunity Employer M/F/D

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
POST OFFICE BOX 2244
FRANKFORT, KY 40601



IRREVOCABLE LETTER OF CREDIT NO.: _____
DATE: _____

Dear Department:

We hereby open our irrevocable Letter of Credit in your favor for the account of _____ as operator, to cover wells drilled, deepened, reopened, or transferred to the above-named principal, for the sum of _____ dollars (\$_____) available by your draft or other demand on us at sight.

This Letter of Credit constitutes collateral security for performance of the above-named operator's obligations under KRS 353.590.

This Letter of Credit shall be subject to terms contained herein and shall cover all wells as security until plugged with the Department's approval and all records required by the Department are properly filed or all wells covered by this letter as security are transferred to a successor operator with bond as provided in KRS 353.590 or the operator posts a substitute bond to replace this letter of credit subject to the Department's approval.

All drafts drawn under this Letter of Credit are to be endorsed thereon and shall bear the clause "Drawn under Letter of Credit No. _____." This Letter of Credit is effective as of _____ and shall expire on _____ but such expiration date shall be automatically extended for a period of one year and each successive expiration date, unless at least 120 days before the current expiration date, we notify both you and the operator by certified mail that we have decided not to extend this Letter of Credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by you as shown on the signed return receipt.

We hereby agree with you that all drafts drawn under and in compliance with the terms of the Letter of Credit shall be duly honored upon presentation to us, and we shall remit the amount of the draft by certified check payable to the "Kentucky State Treasurer" in accordance with your instructions.

We shall give notice within fifteen (15) days to the operator and the Director, Division of Oil and Gas, of any notice received or action filed alleging our insolvency or bankruptcy, or alleging any violations of regulatory requirements which could result in suspension or revocation of our charter or license to do business.

Except as otherwise expressly stated herein, the Credit is subject to the uniform Customs and Practice for Documentary Credits (1993 Revision), International Chamber of Commerce, Publication No. 500.

Yours very truly,

Authorized Signature Title

KentuckyUnbridledSpirit.com
ED-16 (REV 03/05)



An Equal Opportunity Employer M/F/D



COMMONWEALTH OF KENTUCKY
DEPT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS

Bond No. _____

Surety Company's phone number: _____

SURETY BOND
COVERING WELLS TO BE DRILLED, DEEPENED, RE-OPENED OR
TEMPORARILY ABANDONED

KNOW ALL MEN BY THESE PRESENTS:

That we _____, as principal

and _____ a corporation, as surety, authorized to do business in this Commonwealth, are held and firmly bound unto the Commonwealth of Kentucky, Department for Natural Resources, in the penal sum of \$ _____ lawful money of the United States, for which payment, well and truly made, we jointly and severally bind ourselves, our personal representatives, our heirs, executors, administrators or successors, and assigns.

The conditions of this obligations is such that whereas the above bounden principal proposed to: [] FNL [] FEL Carter Coordinates [] FSL [] FWL Section _____ Letter _____ Number _____ Drill [] Deepen [] Reopen [] Temporarily Abandon [] a well in this Commonwealth known as the _____ (farm) No. _____ located in _____ County; under the provisions of KRS Chapter 353; if the above bounden principal shall comply with the laws of this Commonwealth and the rules, regulations and orders of the Department for Natural Resources, with reference to the proper plugging of said well, and filing with the Department all records required by the Department, in the event that said well does not produce oil or gas in commercial quantities, or cease or produce oil or gas in commercial quantities, then this obligation is void; otherwise, the same shall be and remain in full force and effect.

The duration of this bond shall be from the time filed with the Department until the Director of Oil and Gas, upon being satisfied that the owner or operator has plugged the well in accordance with the law and the rules and regulations of the Department for Natural Resources, and that all logs, plugging affidavits, or other pertinent information required by KRS Chapter 353 and the rules and regulations and orders of the Department have been filed, releases the bond.

IN WITNESS WHEREOF, we have hereunto set our hands and affixed our seals this _____ day of _____, 20_____.

When bond is released, return to:

Principal
Surety
by _____

(When principal or surety executes this bond by agent, power of attorney or other, evidence of such authority must be attached.)



Bond No. _____

**COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS**

**BLANKET SURETY BOND
COVERING WELLS TO BE DRILLED, DEEPENED, RE-OPENED OR
TEMPORARILY ABANDONED**

KNOW ALL MEN BY THESE PRESENTS:

That we _____, as principal and _____ a corporation, as surety, authorized to do business in this Commonwealth, are held and firmly bound unto the Commonwealth of Kentucky, Department for Natural Resources, in the penal sum of _____ lawful money of the United States, for which payment, well and truly made, we jointly and severally bind ourselves, our personal representatives, our heirs, executors, administrators or successors, and assigns.

The condition of this obligation is such that whereas the above bounden principal proposes to drill, deepen, reopen or temporarily abandon wells in this Commonwealth; under the provisions of KRS Chapter 353; if the above bounden principal shall comply with the laws of this Commonwealth and the rules, regulations and orders of the Department for Natural Resources, with reference to the proper plugging of said wells, and filing with the Department all records required by the Department, in the event that said wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, then this obligation is void; otherwise, the same shall be and remain in full force and effect.

The duration of this bond shall be from the time filed with the Department until the Director of Oil and Gas, upon being satisfied that the owner or operator has plugged the wells in accordance with the law and the rules and regulations of the Department for Natural Resources, and that all logs, plugging affidavits, or other pertinent information required by KRS Chapter 353 and the rules and regulations and orders of the Department have been filed, releases the bond.

IN WITNESS WHEREOF, we have hereunto set our hands and affixed our seals this _____ day of _____, 20_____.

Principal

Surety

by _____

(When principal or surety executes this bond by agent, power of attorney or other, evidence of such authority must be attached.)

Form ED-6 (Rev. 4-90)



VERIFICATION OF CERTIFICATE OF DEPOSIT

State Form

SEND TO: DEPARTMENT FOR NATURAL RESOURCES
DIVISION OF OIL AND GAS
P. O. BOX 2244
FRANKFORT, KY 40602

Gentlemen:

This is to advise you that the undersigned, pursuant to obligations set forth in KRS 353.590, does hereby assign, transfer to and pledge with the Department for Natural Resources all right, title and interest of the undersign in and to the Certificate of Deposit issued by or carried with

Bank Name	Phone Number
Address	
City and State	Zip Code
E-mail Address	

and identified as Certificate of Deposit # _____, in the face amount of \$ _____, except that interest on the certificate is the property of the assignor.

The assignment constitutes collateral security for performance of the assignor's obligations under KRS 353.590.

The undersigned appoints the Director for the Division of Oil and Gas, Department for Natural Resources as the true and lawful attorney of the undersigned to demand, collect, and receive all amounts, excluding interest, which shall become due under the certificate of deposit and to endorse the certificate of deposit for payment or negotiation and to endorse any commercial paper given in payment of the certificate of deposit. The Director may permit automatic renewal of the certificate of deposit on any maturity date.

The undersigned warrants that the Certificate of Deposit is contemporaneously with the execution hereof being delivered to the Director; that the Certificate of Deposit is genuine and is in all respects what it purports to be; that the undersigned is the owner thereof free and clear of all liens and encumbrances; and that the undersigned has full power, right and authority to execute and deliver this assignment.

Signature	Date Signed	If Corporation, Title
Signature	Date Signed	If Corporation, Title

SIGNATURE GUARANTEE AND UNDERTAKING BY THE FINANCIAL INSTITUTION

The signature(s) of the assignor(s) appearing above (were) made in the presence of the Undersigned Officer of the Financial Institution in the above collateral assignment and is (are) herewith guaranteed by it.

This institution shall save and hold harmless the Department for Natural Resources and the State of Kentucky from all loss, claims, and litigation which it may suffer in consequence of its action in reliance upon and pursuant to the above assignment.

Financial Institution	By
Signature	Date Signed

The Director of the Division of Oil and Gas, Department for Natural Resources herewith acknowledges receipt of the above assignment and agrees to act there under.

Director, Division of Oil and Gas, Department For Natural Resources	Date Signed
--	--------------------

ED-20 (REV 2/99)

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**COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES & ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER**

APPLICATION FOR PERMIT TO CONSTRUCT ACROSS OR ALONG A STREAM

Chapter 151 of the Kentucky Revised Statutes requires approval from the Division of Water prior to any construction or other activity in or along a stream that could in any way obstruct flood flows. -

1. **OWNER:** _____
Give name of person(s), company, governmental unit, or other owner of proposed project.
MAILING ADDRESS: _____

TELEPHONE: _____

2. **AGENT:** _____
Give name of person(s) submitting application, if other than owner.
ADDRESS: _____

TELEPHONE: _____

3. **ENGINEER:** _____
P.E. NUMBER: _____

4. **DESCRIPTION OF CONSTRUCTION:** _____
Give specifications and type of the proposed construction and tell purpose of the project.

5. **LOCATION OF CONSTRUCTION:** _____
Give county name, directions from nearest town, stream name and mile, latitude, longitude, etc.

6. ESTIMATED BEGIN CONSTRUCTION DATE: _____
7. ESTIMATED END CONSTRUCTION DATE: _____
8. THE APPLICANT *MUST* ADDRESS PUBLIC NOTICE.
- (a) PUBLIC NOTICE HAS BEEN GIVEN FOR THIS PROPOSAL BY THE FOLLOWING MEANS:
- ___ PUBLIC NOTICE IN NEWSPAPER HAVING GREATEST CIRCULATION IN AREA (provide copy)
- ___ PROPERTY OWNER AFFIDAVITS (contact Division of Water for requirements)
- (b) ___ I REQUEST WAIVER OF PUBLIC NOTICE BECAUSE (contact Division of Water for requirements):
- _____
9. I HAVE CONTACTED THE FOLLOWING CITY OR COUNTY OFFICIALS CONCERNING THIS PROJECT
(Give name and title of person(s) contacted and provide copy of any approval city or county may have issued):
- _____
10. LIST OF ATTACHMENTS: _____
List plans, profiles, or other drawings and data submitted. A map should always be provided.
11. I CERTIFY THAT THE "OWNER" OWNS OR HAS EASEMENT RIGHTS ON ALL PROPERTY ON WHICH THIS PROJECT WILL BE LOCATED OR ON WHICH RELATED CONSTRUCTION WILL OCCUR (including, for dams, the area that would be impounded during the design flood): _____ (Initial here).
12. REMARKS: _____

I hereby request approval for construction across or along a stream as described in this application and any accompanying documents. To the best of my knowledge, all of the information provided is true and correct.

Signature: _____
Owner or Agent sign here (Agent should provide copy of Power of Attorney)

Date: _____

SUBMIT APPLICATION AND ATTACHMENTS TO:

Division of Water
Water Resources Branch
Floodplain Management Section
14 Reilly Road
Frankfort, Kentucky 40601

Rev. 6/96 0m

Commonwealth of Kentucky
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection
Division of Water

INSTRUCTIONS TO APPLICANTS FOR
APPROVAL OF CONSTRUCTION IN A FLOODPLAIN

Chapter 151 of the Kentucky Revised Statutes and related regulations require approval by the Natural Resources and Environmental Protection Cabinet prior to the construction or reconstruction of any dam, embankment, levee, dike, bridge, fill or other obstruction in the floodplain of any stream in the Commonwealth. In order to comply with this statute, anyone who proposes such an activity must submit to this Cabinet an application and one (1) set of such plans, drawings, and specifications as are necessary for a determination of the proposed project's compliance with state laws and regulations and of the effects of the project on the floodway and the flooding of the stream. The application and other information shall be sent to:

Floodplain Management Section
Division of Water
14 Reilly Road
Frankfort, Kentucky 40601
Telephone: (502) 564-3410

The applicant is responsible for proper design, engineering and construction of the proposed project. The Cabinet's approval of the plans does not relieve the applicant from any liability related to construction, operation, or maintenance of the project.

Each application shall be made on the standard form available from, and in the manner specified by, the Cabinet's Division of Water. [NOTE: The application shall not be considered complete until all information required by the Division has been properly submitted.] The application shall be made in the name of the owner, but may be submitted by an authorized agent of the owner. (If submitted by the agent, a Power of Attorney or other authorization by the owner should be included with the application.) The owner must own or have easement or other rights to all property on which the project is to be located, including all areas that are to be entered onto or disturbed by the construction process (for dams, this applies also to the area that would be inundated during an occurrence of the appropriate design flood). KRS 151.260 requires that all plans and specifications submitted with the application be prepared by a professional engineer licensed to practice in Kentucky unless this requirement is waived by the Division. In order to facilitate handling and storage, the information accompanying the application should be on standard size sheets between 8 X 10 inches and 17 X 22 inches (24 X 36 inches for dams). The following listing identifies the types of information generally required for the Division's analysis. In some cases additional information as specified by the Division may be required.

1. **General:** All plans submitted must prominently display at least the following information regarding the proposed project: Name of the project, date, scale, name of stream, direction of flow, purpose and intended use, scheduling of activities, and location. Photographs of the proposed construction site looking both upstream and downstream at each cross-section and other points of interest are generally useful and may be required. All elevations shall be given with respect to mean sea level. Also, a north arrow shall be provided where applicable. A public notice will be required unless waived by the Division, see Section #9 on the following Page.
2. **Bridges or Fills:** A properly completed Stream Construction Permit Application Data Sheet; a map showing the location of the proposed project and showing the stream far enough upstream and downstream to determine the approach and discharge flow conditions above and below the site (500 feet minimum); a section of USGS quadrangle map indicating general location of the project; the drainage area and the method of determining the design flow; the finished floor elevations of all houses located within 1000 feet of the project; field-surveyed cross-sections (referenced to MSL) of the stream at the site of the project showing conditions both before and after construction and extended to at least the elevation of the extreme flood of record plus three feet, preferably at intervals of not more than one hundred (100) feet; additional cross-sections every one hundred (100) feet for five hundred (500) feet upstream and downstream—the final required number and spacing of cross-sections shall be based on whatever is necessary to determine the effects of the proposed construction on the flow and flooding of the stream, but in general no fewer than four sections shall be provided in each direction. Cross-sections shall be presented with left and right appearing as they would for an observer looking downstream. See typical cross-section detail requirements below.

3. **Dams:** A properly completed Dam Construction Permit Application Data Sheet; the project location (provide portion of USGS quadrangle map); the hazard classification determined by the design engineer to be appropriate (justification for the classification may be required by Division of Water); plans and specifications of sufficient detail to show spillways and other hydraulic and structural features to afford a basis for judgement as to the safety of the structure. In the case of class "B" or class "C" dams (as defined by Division of Water regulations), the Division will require complete design plans in accordance with the minimum design criteria set forth in 401 KAR 4:030. (Copies of this regulation are available from the Division.) [NOTE: The owner must own or have adequate easement rights for the property on which the dam is to be constructed and on the entire reservoir area (up to the level of the appropriate design flood).]
4. **Channel Relocations:** A properly completed Stream Construction Permit Application Data Sheet; a project location map (preferably USGS quadrangle map); the finished floor elevations of all houses located within 1000 feet of the project; surveyed cross-sections referenced to mean sea level, of both proposed and existing channel with left and right appearing as they would for an observer looking downstream; the cross-sections should extend to at least the height of the extreme flood of record with sections taken at the upstream and downstream ends of the relocation, and sufficient sections taken in between to adequately portray changes in stream gradient and geometry, preferably at intervals of not more than one hundred (100) feet; no fewer than three cross-sections should be submitted; at least one cross-section should be submitted for the channel one hundred (100) feet downstream of the proposed relocation. See typical cross-section requirements in #8 below.
5. **Pipeline Stream Crossings (for crossings that are not covered under 401 KAR 4:050):** A properly completed Stream Construction Permit Application Data Sheet; a location map (preferably USGS); a profile along the pipe; the diameter of pipe; the material and the weight of pipe in pounds per linear foot, and the weight and type of anchorage; and all data requested under Bridges or Fills presented above.
6. **Aerial Crossings:** A properly completed Stream Construction Permit Application Data Sheet; a location map (preferably USGS); a profile along crossing showing supports, water surface elevation, and distance above water at closest point.
7. **Fixed Docks, Piers, Wharves, Water Intakes, etc:** A properly completed Stream Construction Permit Application Data Sheet; a location map (preferably USGS); the elevation of docks, top of structure, extreme high water, and normal pool; and the distance that the structure will project into stream.
8. **Cross-Section Requirements (see typical drawing):**
 - (1) All cross-sections shall be obtained by field survey. All sections shall be taken perpendicular to stream flow presented with left and right appearing as they would for an observer looking downstream.
 - (2) The horizontal scale shall be such that one inch (1") represents no more than two hundred feet (200'). The vertical scale shall be such that one inch (1") represents no more than twenty feet (20'). This requirement may be waived by the Division upon the request of the applicant if another scale is determined more appropriate.
 - (3) The cross-sections shall be designated by horizontal stationing with station 0 + 00 designating the most downstream section, 1 + 00 indicating a section one hundred (100) feet upstream, and so on (see sketch representing typical plan view).
9. **Public Notice Information:**
As part of the stream construction permit issuance procedure, the applicant must provide notice to all parties who might be affected by the construction for which a permit has been requested. Public notice may be provided by either of the following methods:

- (1) Publishing a notice in the newspaper or newspapers having greatest circulation in the area of the proposed construction. The notice shall provide at least (a) the name of the applicant, (b) the location, the nature and the extent of the proposed construction, and (c) a statement indicating that any comments and objections are to be directed to the Division of Water. The notice shall prominently display address and telephone number of the Division of Water's Floodplain Management Section, which are given at the beginning of these instructions. The notice shall run for a period of three (3) consecutive days or printings of the newspaper. However, if the newspaper is published weekly, two (2) consecutive printings may be allowed upon request of the applicant. Proof of public notice through the newspaper must be provided to the Division. The public notice shall be at least three column inches in size, but must in all cases be large enough that all of the information required is readable.
- (2) Submitting affidavits from all parties who reside, own property, or have other legitimate property interests in the affected areas. The affidavit must contain a complete description of the proposed construction; a place for concerned parties to sign indicating that they have read the statement and that they understand that a permit application is being submitted or has been submitted to the Division; and the Division's address and telephone number with explanation that comments and objection are to be directed to this agency. All affidavits shall be submitted to the Division of Water, Water Resources Branch for review.

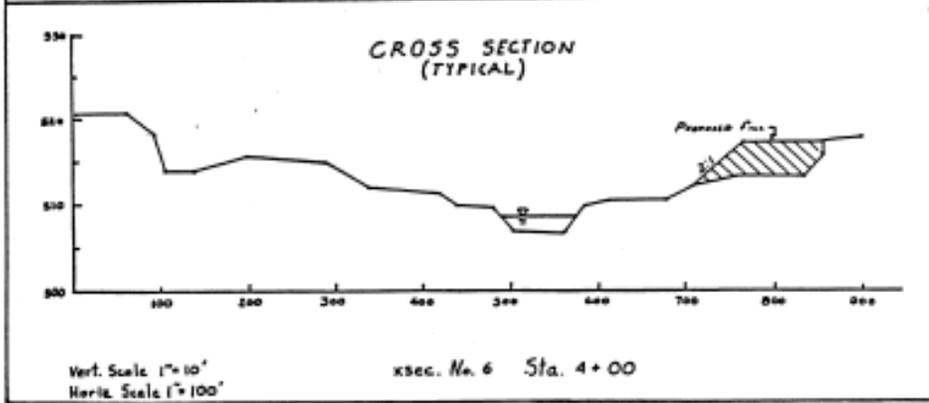
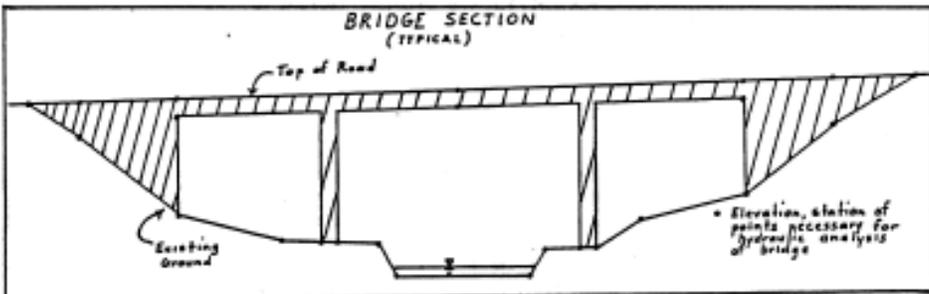
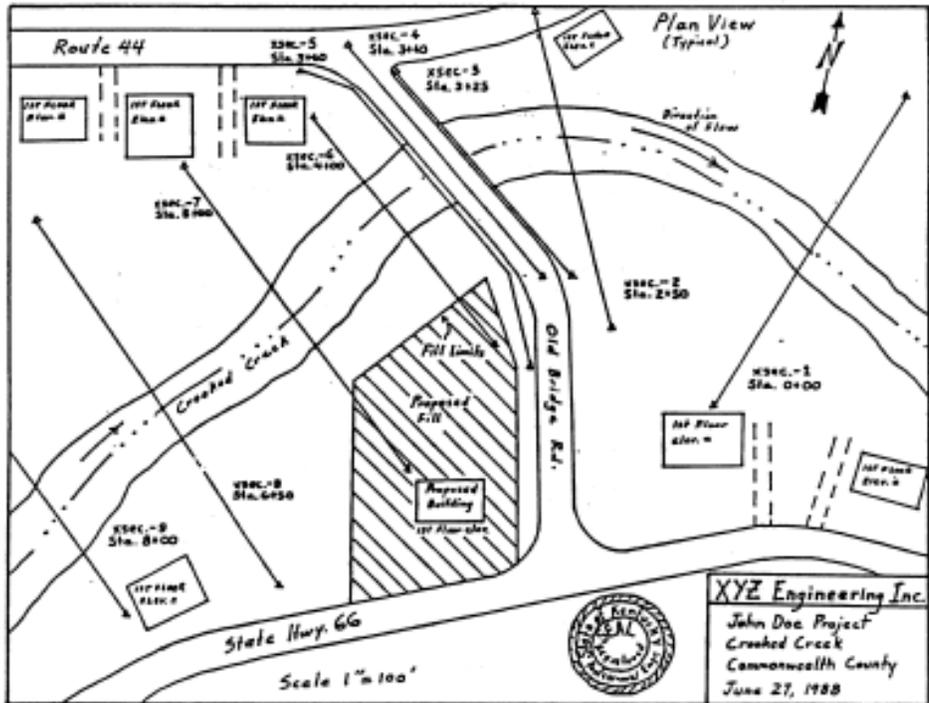
Under certain circumstances, where flooding impacts are negligible, the Division may waive the public notification requirement. If desired, the Division can provide more detailed information regarding the circumstances under which such a waiver might be issued.

EXAMPLE OF PUBLIC NOTICE

—Public Notice—

Notice is hereby given that (NAME AND ADDRESS), has filed an application with the Natural Resources and Environmental Protection Cabinet to (BRIEF DESCRIPTION OF CONSTRUCTION). The property is located (LOCATION DESCRIPTION, INCLUDE MILES FROM NEAREST TOWN OR MAJOR ROAD INTERSECTION AND NAME OF STREAM). Any comments or objections concerning this application shall be directed to: Kentucky Division of Water, Water Resources Branch, 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601. Phone: (502) 564-3410.

rev. 5/95
dww



COMMONWEALTH OF KENTUCKY
 NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
 Department for Environmental Protection
 Division of Water
 18 Reilly Road, Frankfort, Kentucky 40601

KENTUCKY WILD RIVERS PROGRAM
Change of Use Permit
APPLICATION

NAME OF WILD RIVER _____	
A. APPLICANT INFORMATION	
Name: _____	
Address: _____	
Telephone: _____	
Does Applicant own fee title to property affected by the proposed land use change? <input type="checkbox"/> yes <input type="checkbox"/> no	
Does Applicant own the mineral rights of the affected property? <input type="checkbox"/> yes <input type="checkbox"/> no	
Does Applicant have a lease or contract authorizing the proposed land use change? <input type="checkbox"/> yes <input type="checkbox"/> no	
Attach lease or contract to this application form.	
B. LEASEE/OPERATOR INFORMATION (If different from Applicant)	C. LANDOWNER INFORMATION (If different from Applicant)
Name _____	Name _____
Address _____	Address _____
City _____ State _____	City _____ State _____
Zip Code _____ Phone _____	Zip Code _____ Phone _____
D. TYPE OF LAND USE CHANGE (check those which apply):	E. LOCATION OF LAND USE CHANGE
<input type="checkbox"/> Selective Timber Cut	County _____
<input type="checkbox"/> Oil/gas Wells	U.S.G.S. Quadrangle Map _____
<input type="checkbox"/> Underground Mining	Latitude _____
<input type="checkbox"/> Agriculture	Longitude _____
<input type="checkbox"/> Construction	River Mile-point _____
F. EXISTING LAND USE (estimate acreage of each)	G. EXTENT OF LAND USE CHANGE
<input type="checkbox"/> acres of Forest	Total acreage affected: _____
<input type="checkbox"/> acres of Wetland	Total miles of river front affected: _____
<input type="checkbox"/> acres of Farmland	Total acreage surface disturbance: _____
<input type="checkbox"/> acres of Residential/urban	Total acreage timber removal: _____
<input type="checkbox"/> acres of Mining/Industrial	Average daily water use required: _____

**WILD RIVERS CHANGE OF USE PERMIT APPLICATION
Land Use Plan for Oil and Gas Production**

GENERAL PERMIT REQUIREMENTS. KRS 146.290 requires that a landowner obtain a permit prior to conducting a resource removal within a Wild River corridor designated pursuant to KRS 146.220. A permit to authorize oil and gas production contains performance standards and guidelines to protect the scenic and environmental quality of the designated river corridor.

For aesthetic, water quality and fish and wildlife purposes, no clearing of vegetation or other surface disturbance should occur within 100 feet of the banks of a Wild River. No discharge into surface waters of oil, brine water or other substances used in or resulting from the exploration, drilling and production of oil and gas will be permitted within a Wild River corridor. In most cases, storage or holding tanks should be located outside of the corridor. Construction and all activities involving the use of heavy equipment should be conducted during the dry season, generally June 1 to October 31. Blowout prevention equipment should be used on drilling rigs. Other site-specific permit conditions will be determined when the completed permit application is reviewed.

A. GENERAL OPERATION PLAN

1. Attach a U.S. Geological Survey topographic map (scale:1 inch = 500 ft.) showing the planned locations and routes of each of the following:

a. Access roads and stream crossings	d. Equipment holding areas
b. Wells	e. Collection or holding pits and ponds
c. Tank battery	f. Collecting lines and pipelines

2. Provide estimates, to the best of your knowledge, of the following:

a. Total acreage to be cleared around each well:	_____
b. Number of trees per acre to be cut, if any:	_____
c. Number and size of collection or holding pits:	_____
d. Number and size of tanks in battery:	_____
e. Length and width of access roads to be constructed or improved:	_____
f. Total length of collecting lines and pipelines:	_____
g. Number and acreage of equipment holding areas:	_____

3. Indicate how often the operation facilities will be inspected by the leasee or his representatives:

4. List all chemicals to be used, including cleaning acids, pesticides, etc., and describe the planned methods of application for each:

B. PROTECTION OF SOIL, WATER AND VISUAL QUALITY

1. Briefly describe the methods that will be used to control soil erosion on each of the following:
 - a. Access roads

<p>b. Well benches</p> <p>c. Equipment holding areas</p> <p>2. Briefly describe planned methods for protecting fish habitat and water quality at stream and drainage crossings (i.e., use of culverts, temporary bridges, etc.):</p> <p>3. Briefly describe planned methods for keeping logging debris and other organic matter out of surface waters:</p> <p>4. Briefly describe planned methods for minimizing the visual impact of the new land use as viewed from the wild river:</p>

C. SPILL PREVENTION AND CONTROL COUNTERMEASURE PLAN

Attach a Spill Prevention and Control Countermeasure (SPCC) Plan (required under 40 CFR Part 112). Describe in detail planned methods for preventing, containing and cleaning up accidental leaks or spills of oil or brine water, explosions, fires or other environmental hazards. Include a description of the tank battery, lining of holding pits, method to separate oil and brine, prevention of vandalism of tanks and placement of pipelines. Attach additional sheets if necessary.

D. RECLAMATION

Describe planned methods for restoring the affected area to its present appearance and condition at the conclusion of the new land use, including plans for revegetation and stabilization of disturbed areas.

NAME AND TELEPHONE NUMBER OF PERSON TO CONTACT FOR MORE INFORMATION:

RETURN THIS FORM TO: Wild Rivers Program, Division of Water, Department for Environmental Protection, Frankfort Office Park, Frankfort, KY 40601.

**STOP!! DO NOT ATTEMPT TO COMPLETE THIS FORM
UNTIL YOU HAVE CAREFULLY READ THE INSTRUCTIONS**

Type of Registration (check one): New
 Update
 Update Involving Transfer of Ownership

1. Registration No.: _____
(agency use only)

2. a. Owner's Name: _____
b. Owner's Mailing Address: _____
c. City: _____ State: _____ Zip Code: _____
d. Telephone No.: (____) _____
e. Business Form: Partnership KY Corporation Non-KY Corp
 Soleproprietor

3. Manager's/Pumper's Name: _____
Telephone Number: (____) _____

4. Lease Name: _____

5. Tank Battery Location and Size:
a. Carter Coordinates: Section: _____ Letter: _____ No.: _____
Feet from North Line _____ or Feet from South Line _____
Feet from East Line _____ or Feet from West Line _____
b. County: _____ Highway: _____
c. Number and storage capacity of tanks: _____
d. SPCC containment provided Yes No

6. Production Associated With This Tank Battery
a. Total wells connected to battery: _____
b. Number of production wells: _____
List Department of Mines and Minerals Well Permit # _____
c. Amount of oil produced: _____ bbls/day
Amount of gas produced: _____ mcf/day
d. Amount of produced water made: _____ bbls/day

(continued)

7. Produced Water Disposal Method (check one)

- a. Enhanced Recovery Well Discharge to a Surface Stream or Pit
 Disposal Well Evaporation (describe) _____
 Transported Off-Site for Disposal
 Other (describe) _____
 KPDES Permit No.: _____
- b. If the disposal method is a well, what is the name of the receiving formation and the EPA UIC Permit # _____
- c. If the disposal method involves a discharge to a surface stream, what is the distance to and name of the receiving stream _____

8. Provide photocopy of USGS topo map with the location(s) of the Tank Batterie(s) marked.

9. Signature _____ Title _____

Please Print Name _____ Date _____

OIL AND GAS PRODUCERS PRODUCED WATER DISPOSAL REGISTRATION FORM
COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER

Regulation 401 KAR 5:090, Section 4 (Control of Water Pollution From Oil and Gas Facilities), requires all oil and gas operators to register their facilities with the Division of Water. Those operators who have submitted registration forms previously are not required to submit these forms unless there has been a change in the information submitted.

INSTRUCTIONS
COMPLETE A REGISTRATION FORM FOR EACH TANK BATTERY
PLEASE PRINT OR TYPE

1. Registration No.: Do not write in this space, this number will be assigned by Division of Water Office personnel.
2. Owner's Name, Mailing Address and Telephone No.: Give the complete name, mailing address, and telephone number of the operator.
3. Manager's/Pumper's Name and Telephone No.: Give the complete name and telephone number of the manager or pumper.
4. Lease Name: Give the current lease name.
5. Tank Battery Location: Give the Carter Coordinate location and the county of this tank battery.
6. Production Associated With This Battery: Give the total number of wells and the number of production wells associated with this tank battery. Give the amounts of oil (in barrels per day), gas (in thousand cubic feet per day) and produced water (in barrels per day) processed at this tank battery.
7. Produced Water Disposal Method: Check the box which best describes your disposal method.
Enhanced Recovery Well: Produced water is discharged through a well into the production zone to aid in the recovery of oil or gas.
Disposal Well: Produced water is discharged through a well into a zone other than the production zone for disposal.
Transported Off-Site for Disposal: Produced water is removed from the tank battery by way of a tank truck or pipeline for disposal at another site.
Discharge to a Surface Stream or Pit: Produced water is placed in a pit which has a discharge to a surface stream, and/or produced water directly discharges into a surface stream.
Evaporation: Produced water is placed in a pit which has no surface discharge or enhanced evaporation, please describe.
8. USGS Topographic Map: Please provide photocopy of map spotting location(s) of Tank Batteries(s).
9. Signature: The person who is responsible for the operation of this tank battery shall sign this form and indicate their title.

If more forms are required, please contact the Division of Water at (502) 564-3410.

Return the completed forms to the following address:

Industrial Section
KPDES Branch
Division of Water
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601

Department for Environmental Protection
 Division of Water, KPDES Branch
 14 Reilly Road, Frankfort Office Park
 Frankfort, Kentucky 40601



TRANSFER OF OWNERSHIP

PURSUANT TO 401 KAR 5:090, SECTION 4

<i>TRANSFERRED TO:</i>	<i>TRANSFERRED FROM:</i>
OPERATOR _____	OPERATOR _____
ADDRESS _____	ADDRESS _____
_____	_____
IF CORPORATION, NAME PRINCIPAL REPRESENTATIVE _____	IF CORPORATION, NAME PRINCIPAL REPRESENTATIVE _____
_____	_____

Enclose a Completed Updated Registration Form for Each Facility Listed

<u>LEASE NAME</u>	<u>COUNTY</u>	<u>REGISTRATION NUMBER</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

CERTIFICATION:

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND I AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS DOCUMENT. I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE, AND COMPLETE. IN ORDER FOR THE DIVISION OF WATER TO ACCEPT THIS DOCUMENT, SIGNATURES OF BOTH THE BUYER AND THE SELLER ARE REQUIRED. IF YOU ARE UNABLE TO OBTAIN THE SIGNATURES OF THE SELLER, SOME OTHER VERIFICATION OF THE TRANSACTION, SUCH AS A COPY OF THE ASSIGNMENT WILL BE ACCEPTABLE.

 SIGNATURE OF PURCHASER

 DATE

 SIGNATURE OF SELLER

 DATE

**KENTUCKY DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
APPLICATION TO DISPOSE OF PRODUCED WATER OFF-FACILITY
(Please Print or Type)**

I. Producing Facility
Registration Number _____ Lease Name _____
Operator Name _____
Address _____
Barrels of water produced per day _____
Barrels of produced water being transported (bbls/day) _____

II. Hauler
Name _____ Phone Number (____) _____
Address _____
Vehicle License _____, _____, _____
Vehicle Description _____
If by pipeline _____ distance _____ diameter _____

III. Disposal Site
Registration Number _____ Lease Name _____
Operator Name _____
Address _____
Location (Carter Coordinates) _____ (County) _____
Method of Final Disposal (choose at least one)
____ Enhanced Recovery
UIC Permit # _____ (if available)
____ Disposal Well
UIC Permit # _____
____ No Discharge System (describe) _____

IV. Signature _____ **Date** _____
Name and Title _____

INSTRUCTIONS

I. Producing Facility

Registration Number: Write the seven digit number assigned for the tank battery from which the produced water will be transported. If you have not registered or can not locate the registration number, please call (502) 564-3410.

Lease Name: Give lease name of facility from which the produced water will be transported.

Operator's Name, Address, and Telephone Number: Give the complete name, mailing address, and telephone number of the facility operator.

Barrels of Water Produced Per Day: Give amount of water that is produced per day (example: ? barrels/month or gallons/day, etc.).

II. Hauler

Hauler's Name, Address, and Telephone Number: Give the complete name, mailing address, and telephone number of the transporter.

Transport Vehicle Information: (a) **License Number:** If more than one vehicle is to be used, list all numbers (use separate sheet, if necessary). (b) **Description:** Give the year, make, and capacity of the transport vehicle(s). Or specify alternate method of transportation such as pipelines, etc.

III. Disposal Site

Registration Number: Write seven digit number assigned for the tank battery to which the produced water will be transported. If you have not registered or can not locate the registration number, please call (502) 564-3410.

Lease Name: Give lease name of facility to which the produced water will be transported.

Disposer's Name, Address, and Telephone Number: Give the complete name, mailing address, and telephone number of the disposer.

Location: Give the county name and the Carter Coordinates of the disposal site. If not in Kentucky, please indicate which state.

Final Method of Disposal: Mark final method of disposal (a) **Enhanced Recovery:** Give the Underground Injection Control (UIC) permit number of the disposal facility, if available. Use the Department of Mines and Minerals, Division of Oil and Gas injection well permit number if UIC permit number is not available. (b) **Disposal Well:** Refer to instructions for (a), enhanced recovery. (c) **No Discharge System:** Give a brief description of the no discharge system.

IV. Signature: The person who is responsible for the operation that generates the produced water shall sign this form. **Date, Name and Title:** Self-explanatory.

Send the completed application to the Industrial Wastewater Section, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601. Transport of produced water can not occur until approval has been granted by the Division of Water.

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division of Water

**APPLICATION FOR CONSTRUCTION AND OPERATION OF
A PRODUCED WATER HOLDING PIT - 401 KAR 5:090, SEC. 9**

(Instructions for completing and submitting this form on back.)

Please Print or Type

1. Registration No. _____
 2. Operator's Name: _____
Mailing address: _____
City: _____ State: _____ Zip Code: _____
Telephone Number: () _____
 3. Lease Name: _____
 4. Construction Specifications:
 - (a) Dimensions: _____
 - (b) Liner Composition: _____
 - (c) Liner Thickness: _____
 - (d) Height of Berm: _____
 5. Operation Specifications: *(See instructions on back)*
 6. Closure Specifications: *(See instructions on back)*
 7. Permit Fee: Certified check or money order for one hundred dollars (\$100.00) is (check one) enclosed will submit within 30 days of billing
 8. *I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application 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.*
- Name and Official Title: _____
(Please print or type)
- Telephone Number: () _____
- Signature: _____ Date Signed _____
-
-

INSTRUCTIONS

(This form is to be completed and submitted with all necessary attachments at least 20 days prior to the start of construction of a holding pit. Submit two (2) copies of the application package to the Division of Water District Office for the area in which your pit will be located. See attached map.)

- 1. Registration Number:** Write the seven digit number assigned to this facility. If you have not registered or cannot locate the registration number, please call (502) 564-3410 extension 446.
- 2. Operator's Name, Mailing Address, and Telephone Number:** Give the complete name, mailing address, and telephone number of the facility operator.
- 3. Lease Name:** Give the name of the lease and the county in which it is located.
- 4. Construction Specifications:**
 - (a) Dimensions:** Give the length, width, and depth of the pit in feet,
 - (b) Liner Composition:** Give the type of liner used (hypalon, polyurethane, etc.),
 - (c) Liner Thickness:** Give the thickness of the liner in mils,
 - (d) Height of Berm:** Give the height of the berm in feet.
- 5. Operation Specifications:** The following should be attached to the application:
 - 1) a diagram (at least 8.5" x 11" and no larger than 11" x14") showing location of surface water diversion structures and their dimensions, and
 - 2) a narrative describing how minimum freeboard will be maintained and how material will be disposed.
- 6. Closure Specifications:** Attach a narrative describing the type of material that will be used as backfill, final contours, proposed vegetative cover, and how wastes will be disposed.
- 7. Permit fee:** Self explanatory. Make check or money order payable to Kentucky State Treasurer.
- 8. Certification:** Self-explanatory.

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**APPLICATION FOR PERMIT TO INSTALL ABOVEGROUND STORAGE
TANKS FOR PETROLEUM PRODUCTS OR HAZARDOUS SUBSTANCES**



AIG Tanks

For Office Use Only
Revised Form on: December 17, 1996

Permit No.: _____

Approved By: _____

Date Approved: _____

Amount Paid: _____

Installation Site

NAME OF BUSINESS/COMPANY (DBA) _____

STREET ADDRESS _____

CITY STATE ZIP CODE _____

() TELEPHONE NUMBER COUNTY _____

CONTACT PERSON FEDERAL TAX ID NUMBER _____

Owner of Tanks

OWNER/OPERATOR/COMPANY NAME _____

STREET ADDRESS _____

CITY STATE ZIP CODE _____

() TELEPHONE NUMBER COUNTY _____

Installation Contractor

NAME OF CONTRACTOR _____

COMPANY NAME _____

STREET ADDRESS _____

CITY STATE ZIP CODE _____

() TELEPHONE NUMBER _____

Type of Facility

- Commercial Private Use Government
- Heating Oil Bulk Plant
- Other (Please Specify): _____

PLEASE RETURN COMPLETED APPLICATION TO THE ADDRESS LISTED BELOW:

Department of Housing, Buildings and Construction
State Fire Marshal's Office - Hazardous Materials Section
Attention: Dale Mancuso
1047 U.S. Highway 127 South, Suite 1
Frankfort, Kentucky 40601-4337
Telephone Number: (502) 564-3626

Tank Type Codes:	01 UL 142	04 ASME	07 API 12D	10 Sti 921
	02 UL 80	05 API 650	08 API 12F	11 Other
	03 UL 2085	06 API 12B	09 DOT	

1. Tank Information:

NOTE: Tank numbers shall correspond with the tank numbers on the accompanying site plan.

TANK #1:

- GAL
 BBL

Capacity (Gallons) grid: 10 boxes

CAPACITY (GALLONS)

Tank Type Code grid: 2 boxes

TANK TYPE CODE

Approximate Age of Tanks grid: 4 boxes

APPROXIMATE AGE OF TANKS

Product Stored grid: 20 boxes

PRODUCT STORED

- Vertical Horizontal Compartmented

TANK #2:

- GAL
 BBL

Capacity (Gallons) grid: 10 boxes

CAPACITY (GALLONS)

Tank Type Code grid: 2 boxes

TANK TYPE CODE

Approximate Age of Tanks grid: 4 boxes

APPROXIMATE AGE OF TANKS

Product Stored grid: 20 boxes

PRODUCT STORED

- Vertical Horizontal Compartmented

TANK #3:

- GAL
 BBL

Capacity (Gallons) grid: 10 boxes

CAPACITY (GALLONS)

Tank Type Code grid: 2 boxes

TANK TYPE CODE

Approximate Age of Tanks grid: 4 boxes

APPROXIMATE AGE OF TANKS

Product Stored grid: 20 boxes

PRODUCT STORED

- Vertical Horizontal Compartmented

TANK #4:

- GAL
 BBL

Capacity (Gallons) grid: 10 boxes

CAPACITY (GALLONS)

Tank Type Code grid: 2 boxes

TANK TYPE CODE

Approximate Age of Tanks grid: 4 boxes

APPROXIMATE AGE OF TANKS

Product Stored grid: 20 boxes

PRODUCT STORED

- Vertical Horizontal Compartmented

1. **Tank Information (continued):**

g) What will the fill connection diameter be for each tank (indicate inches)?

Tank #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6
<input type="text"/>					

h) What are the diameters of the working vents (indicate inches)?

Tank #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6
<input type="text"/>					

i) What are the diameters of the emergency vents - if equipped (indicate inches)?

Tank #1	TANK #2	TANK #3	TANK #4	TANK #5	TANK #6
<input type="text"/>					

If the tanks do not have emergency vents, are they designed with a weak roof to shell seam?

Yes No

j) Will a valve be installed as close to the tank as practical if a connection is made to the liquid area of the tank? Yes No

k) If class I liquids are to be stored, will the vent pipe outlets be at least twelve (12) feet above adjacent ground level? Yes No

l) If the liquid being stored is other than a class I liquid, will the vent pipe outlet be above the fill connection? Yes No

m) If class IA liquids are being stored, will the tanks be equipped with pressure/vacuum venting devices? Yes No

n) If the tank is over 1,000 gallons capacity, will overfill prevention be provided? Yes No

o) If the liquid being stored is a class I or class II liquid, will the fill connection terminate within six (6) inches of the tank bottom? Yes No

p) Will "no smoking" signs be provided in the area of the tanks? Yes No

q) If the tanks are located at a public facility, will they be enclosed in a chain link fence at least six (6) feet high? Yes No

r) Will the tank outlets be equipped with some sort of anti-siphon device located as close as practical to the tank? Yes No

s) If the storage tank supplies a day tank, will the day tank be provided with return piping that is a continuous run without traps or sags and that is of a larger diameter than the supply piping? Yes No

t) If the fill connection point is other than at tank top, will a check valve be provided to prevent back-flow from the system? Yes No

u) Will the tanks be protected from vehicular damage if placed in a traffic area? Yes No

Aboveground Piping:

- a) Will the aboveground piping be substantially supported and protected against physical damage and excessive stresses? Yes No
- b) Will the aboveground piping be provided with pressure relief devices that discharge to a suitable location? Yes No
- c) Will the aboveground piping meet the requirements of ANSI B31, American National Standard Code for Pressure Piping? Yes No

Underground Piping:

- a) Delivery Method: Pressurized Suction
- b) Type: Steel FRP Approved Non-Metallic
- c) Will FRP and non-metallic piping be listed for use with alcohols and other oxygenated fuels?
 Yes No
- d) Will flexible connections be provided at every change of direction from the vertical to the horizontal, and vice versa? Yes No
- e) Type of flexible connections: Swing Joints Approved Flexible Connectors
- f) Depth of piping: _____ inches
- g) Is secondary containment provided for product piping? Yes No
- h) Will pipe sealant be compatible with product to be used? Yes No
- i) Indicate type of bedding and backfill around piping: Sand Pea Gravel Crushed Rock
- j) FRP piping to be properly installed per manufacturer's specifications: Yes No
- k) Type of steel pipe used: Galvanized Black
- l) Indicate degree of slope on piping (inches per foot): Level or 1/8 1/4 1/2
- m) If suction piping is used, indicate location of check valve: Tank Pump/Dispenser
- n) If pressurized pipe is used, will approved leak detectors be used: Yes No
Type: Mechanical Electronic
- o) Indicate method of cathodic protection for steel piping: Anode Impressed Current
- p) Indicate method of sacrificial anode attachment to piping:
 Cadweld Thermit Weld Mechanical Clamp

3. **Underground Piping (Continued):**

- q) Steel pipe to be used for product or vent lines: Schedule 40 Schedule 80
- r) Steel couplings for product or vent lines will be: Schedule 40 Schedule 80
- s) Method of leak detection for piping: Tightness Testing
 Ground Water Monitoring Vapor Monitoring Interstitial Monitoring

4. **Pumps/Dispensers:**

- a) Where will the pump/dispensers be located in relation to the tanks? Tank Top
 5 to 49 Feet 50 Feet and Greater Directly Adjacent to the Dike Wall
- b) Will all dispensers be at least:
- Twenty (20) feet from fixed source of ignition? Yes No
Ten (10) feet from property lines? Yes No
Five (5) feet from any building opening? Yes No
- c) Will heating fuel dispensers be located on a different island gasoline dispensers? Yes No
- d) Will each end of a dispenser island be protected with metal crash post barriers at least thirty (30) inches in height? Yes No
- e) Will shear valves be properly installed on pressurized piping runs? Yes No
- f) Will the pumps and dispensers be UL listed? Yes No
- g) Will some sort of emergency shut-off device be provided more than twenty (20) feet, but less than one hundred (100) feet from the dispensing area? Yes No
- h) Will all wiring be installed in accordance with NFPA 70, the National Electrical Code?
 Yes No
- i) Will the wiring be certified by a certified electrical contractor? Yes No

5. **Bulk Plants:**

- a) Please indicate the distance from the load rack to nearest building, property line, and storage tanks:
_____ Feet to Building _____ Feet to Property Line _____ Feet to Storage Tanks
- b) If the rack is a top loading type, will the final fuel control valve be of the self-closing type?
 Yes No
- c) If the rack is a bottom load configuration, will an automatic overfill prevention system be provided?
 Yes No
- d) In the load/un-load area, will an emergency drainage system be provided that will direct leakage or spillage to a safe location? Yes No

Fee Schedule

KRS 198B requires a fee for plan review services. A charge of \$50.00 for the first tank and \$25.00 for each additional tank is required for this specialized review. **The required fee must accompany your application for permit.** Your check or money order should be made payable to the "Kentucky State Treasurer". The name and location of the project must be indicated on the check or money order.

I, the undersigned, do hereby agree that this installation shall comply with all applicable requirements of the State Fire Marshal's Office promulgated in 815 KAR 10:050 and all other applicable standards as required. All answers in this application are true and accurate to the best of my knowledge.

Contractor (Signature) _____
Date

Did you enclose your plan review fee? Yes No Amount: \$ _____ .00

Note: Site plan, specifications and check or money order shall accompany this document for approval.

Approval by the State Fire Marshal's Office

Approval of plans to install, subject to final inspection and testing. System shall not be used or products dispensed prior to notification of local State Fire Marshal representative.

**Senior Deputy State Fire Marshal
Office of the State Fire Marshal
Hazardous Materials Section**

This storage tank system was tested on _____ with satisfactory results.

Pursuant to KRS 227.300, REG. 815, and KAR 10:050 the above listed installation is found to have substantially complied with the Kentucky "Standards of Safety".

**Field Inspector
Office of the State Fire Marshal
Hazardous Materials Section**

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