

OIL/GAS EXPLORATION/PRODUCTION/MINING: WATER/WASTEWATER AND OTHER ENVIRONMENTAL ISSUES

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I. ENVIRONMENTAL/STATUTES/REGULATIONS APPLICABLE TO EXPLORATION/PRODUCTION

A. Delineation of Regulatory Jurisdiction between Arkansas Department of Environmental Quality and Arkansas Oil and Gas Commission

Both the federal Environmental Protection Agency (“EPA”)¹ and the Arkansas Department of Environmental Quality (“ADEQ”) are the primary federal and Arkansas agencies respectively that regulate oil and gas exploration/production/operation from an environmental regulatory standpoint. However, the Arkansas Oil and Gas Commission (“AOGC”) regulates production related aspects of oil and gas wells and certain injection wells (i.e., for example, the injection of produced water). For example, AOGC jurisdiction encompasses subsurface aspects of Class II injection of Exploration and Production (“E&P”) wastes.

In contrast, the ADEQ² regulates the above surface activities through Clean Water Act (“CWA”) National Pollution Discharge Elimination System (“NPDES”), state water permitting and other regulatory provisions. ADEQ issues E&P related permits for commercial collection and holding basins for periodic land application, commercial water disposal wells, one-time land application of pit fluids, and industrial facilities such as gas plants. This state agency has also traditionally regulated land treatment and disposal of E&P wastes in landfarms, reserve pits, solid waste landfills, etc., and surface discharge of pit fluids during closure.

The appropriate role of the ADEQ in regulating oil and gas E&P activities in state water permitting context has recently been challenged in a legal action. In December, 2007, Oil Producers of Arkansas (“OPA”) and others filed a lawsuit against the ADEQ in Union County Circuit Court, seeking declaratory and injunctive relief which stemmed from the agency’s issuance of two general no-discharge permits for the construction of pits at drilling sites for the disposal of wastes from drilling activities: “Authorization to Construct, Operate and Close the Pits Associated with Oil and Gas Well Exploration” (Permit No. 00000-WG-P), and “Authorization to Land Apply Drilling Fluids Under the Provision so the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, A.C.A. § 8-4-101 et seq.) and A.C.A. § 8-1-201 et seq.” (Permit No. 0000-WG-LA).

¹ The United States Corps of Engineers Section 404 permitting program may be applicable to some E&P activities.

² Note, however, the Arkansas Department of Health will often comment on permits that may affect public drinking water.

The OPA argued the permits contained numerous regulatory provisions affecting oil and gas production that purport to apply to all industry parties statewide and which subject noncomplying parties to civil and criminal penalties. OPA’s complaint set forth the following grounds as reasons for its requested declaratory and injunctive relief:

- (1) The ADEQ lacked jurisdiction to regulate in the area of oil and gas law because the Oil and Gas Commission is vested with exclusive jurisdiction and authority to regulate oil and gas drilling and production operations in Arkansas;
- (2) The ADEQ permits were an unlawful attempt to promulgate administrative rules because the ADEQ lacked statutory rulemaking authority and failed to comply with proper rulemaking procedures; and
- (3) The permits violated statutory requirements for creating permits, conflicted with an existing regulation of the Arkansas Pollution Control & Ecology Commission, and required unlawfully established permit fees.

An Arkansas court has not definitively ruled on these issues to date.

B. Federal/State Environmental Statutes Potentially Applicable to Oil and Gas Exploration/Production and Mining Activities

1. The Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (“RCRA”) Subtitle C regulations establish requirements for the identification and management of hazardous and nonhazardous “solid” wastes³. Under RCRA, wastes that are not classified as hazardous are called “solid wastes” (even if they are liquids or gases).

a. Bensten/Bevill Exemptions

In the 1980 amendments to RCRA, Congress exempted several types of high volume, low toxicity solid wastes, including certain E&P and mining wastes, from regulation as hazardous wastes, pending further EPA study. The E&P wastes were addressed in the “Bensten” Amendment and mining wastes in the “Bevill” Amendment.

i. Bensten/E&P Exemption

The RCRA exemption for oil and gas E&P wastes is limited by statutory language to “drilling fluids, produced waters, and other wastes associated with the exploration, development,

³ The RCRA regulations specify that a solid “waste” is a material that has been “discarded.” EPA has stated in the past that produced water injected for enhanced recovery is not a waste for purposes of RCRA Subtitle C or D, since produced water used in enhanced recovery is beneficially recycled and is an integral part of some crude oil and natural gas production processes.

or production of crude oil or natural gas or geothermal energy⁴.” The legislative history discusses the term “other wastes associated” as being those wastes “intrinsically derived from the primary field operations.” The phrase is intended to differentiate E&P operations from transportation and manufacturing operations⁵.

Subsequently, in July 1988, EPA issued a regulatory determination addressing the status of various E&P wastes. EPA determined that the E&P Bensten exemption from RCRA Subtitle C includes drilling fluids, produced waters and other wastes uniquely associated with oil and gas E&P activities⁶. The federal agency determined oil and gas wastes constitute “special wastes” due to their “unusually high volume” and their “relatively low level of apparent environmental hazard.”

The EPA E&P Regulatory Determination provides a comprehensive list of wastes both excluded from and included within the scope of the oil field Bensten waste exemption. Oil field wastes typically fall into the following categories:

- 1) Produced waters – mineralized waters produced with and then separated from oil and gas.
- 2) Drilling fluids – mixtures of water, clay, barite, and other additives used in drilling wells
- 3) Associated wastes – other wastes uniquely associated with drilling and production operations, such as crude oil tank bottoms⁷ (i.e., oil, sediment, and water).

The EPA E&P Regulatory Determination clarifies the meaning of RCRA § 3001(b)(2)(A)’s exemption for “other wastes associated with the exploration, development or production of crude oil or natural gas” by stating that such “other wastes” include “rigwash, drill cuttings, and wastes created by agents used in facilitating the extraction, development, and production of the resource, and wastes produced by removing contaminants prior to the transportation or refining of the resource”⁸. A 1993 clarification by EPA notes:

⁴ Wastes falling under the RCRA federal E&P exemption may be either injected or landfarmed pursuant to a state permit. As will be discussed, the Arkansas Oil and Gas Commission is the lead agency in Arkansas for disposal through injection wells. ADEQ is the lead agency in Arkansas for other disposal methods.

⁵ The point of transfer of the custody of the crude oil or natural gas products has been identified by Congress in the legislative history as one factor in determining when transportation begins and E&P operations end. In the absence of custody transfer, the point of production separation and dehydration can be used to determine the end point of E&P operations. Transportation may be for short or long distances, including both, main trunk pipelines and smaller local pipelines. For the purpose of the RCRA E&P exemption, non exempt transportation-related wastes are those resulting from any mode of transportation, including pipelines, after the point of custody transfer or point of production separation or dehydration.

⁶ As will be discussed, oil and gas sites may also generate wastes that are not exempt (e.g., paint, used solvents).

⁷ Although non-E&P wastes generated from crude oil and tank bottom reclamation operations (e.g., waste equipment cleaning solvent) are non-exempt, residuals derived from exempt wastes (e.g., produced water separated from tank bottoms) are exempt. For a further discussion, see the Federal Register notice, Clarification of the Regulatory Determination of Waste from the Exploration, Development, and Production of Crude Oil, Natural Gas and Geothermal Energy, March 22, 1993, Federal Register Volume 58, Pages 15284 to 15287.

⁸ 53 Fed. Reg. 25, 454.

Since 1987, the terms uniquely associated and intrinsic have been used as interchangeable synonyms in various documents in reference to oil and gas wastes qualifying for the exemption from Subtitle C regulation . . . A simple rule of thumb for determining the scope of the exemption is whether the waste in question has come from down-hole (i.e., brought to the surface during oil and gas E&P operations), or has otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants from the product (e.g., waste emulsifiers, spent iron sponge). If the answer to either question is yes, the waste is most likely considered exempt.”⁹

Exempt

The EPA has specifically determined that the following wastes are encompassed by the Bensten exemption:

- produced waters
- drilling fluids
- drill cuttings
- rigwash
- geothermal production fluids well completion and stimulation fluids
- basic sediment and water
- pit sludge and sludge from storage and disposal of exempt wastes
- workover wastes
- gas plant dehydration wastes
- gas plant sweetening wastes for sulfur removal
- cooling tower blowdown
- spent filters, filter media
- packing fluids
- produced sand
- pipe scale and other deposits removed from piping equipment
- soil containing hydrocarbons
- pigging wastes from gathering lines
- constituents removed from produced waters
- liquid hydrocarbons from the production stream
- gases from the production stream
- materials ejected during blow down
- waste crude oil from field operations
- natural gas condensate¹⁰

⁹ 58 Fed. Reg. 25, 448.

¹⁰ The EPA addressed natural gas condensate in detail in a 1993 memorandum stating:
Natural gas condensate is a light hydrocarbon
liquid that sometimes forms through condensation

Non-Exempt

The EPA has determined that the following wastes are not encompassed by the Bensten exemption and therefore may be RCRA hazardous wastes¹¹:

- painting wastes
- unused fracturing fluids and acids
- gas plant cooling tower cleaning wastes
- oil and gas service company wastes
- refinery wastes
- used equipment lubrication oils
- waste compressor oil and filters

of natural gas (hydrocarbon) vapors when natural gas in or conveyed through a pipeline. Does natural gas condensate fall within the scope of this exemption when discarded? Natural gas condensate meets the exemption in § 261.4(b)(5) if it is produced by activities related to the exploration, development, and production of natural gas. It does not meet the exemption if it is produced by other activities, such as post-production transportation. While not a drilling fluid or a produced water, natural gas condensate can be produced by activities associated with loading natural gas, removing it from the ground, or purifying it. Natural gas is usually removed from the ground using an array of wells in one gas field. The Natural gas from all wells is then aggregated and often sent to a gas plant to remove impurities such as water. This removal of impurities is considered a necessary part of the production process, and any wastes resulting from natural gas operations up through this point are exempt. If condensate forms in a pipeline carrying natural gas from the gas field to the gas plant, this natural gas condensate is exempt as an associated waste under §361.4(b)(5). The key is that the activity producing the natural gas condensate must be uniquely associated with natural gas condensate, development, or production operations for the exemption to apply. Natural gas production operations encompass all processing facilities up to and including the gas plant, but not beyond.

¹¹ EPA has stated that if equipment from drilling for crude oil or natural gas is steam-cleaned off-site from the drilling site, is the waste excluded from regulation by 261.4(b)(5) regardless of whether the waste exhibits a Subpart C characteristic. Since only water is used for steam-cleaning, the drilling waste is still excluded from regulation. If another cleaning agent not uniquely associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy was used, then the waste could be subject to regulation. For example, if methylene chloride was used to clean the equipment, the waste would be subject to regulation as F002.

- used hydraulic oil
- waste solvents
- waste in transportation pipeline pits
- caustic or acid cleaners
- pesticide wastes
- sanitary wastes
- boiler cleaning wastes
- drums, insulation
- pigging wastes from transportation lines

An example of a subsequent EPA analysis of a waste that was determined to be outside of the Bensten exemption is found in a 1988 memorandum where the agency stated:

Based on the scope of the RCRA exemption as identified in the regulatory determination published July 6, 1988, EPA believes that the acidic waste water, field waste liquids and waste cement identified in your letter are clearly not exempt.

Acidic wastewater is not exempt because it is not intrinsically derived from the exploration, development, or production of oil or gas within the meaning of the statute. It was never used in such operations, regardless of the intent in preparing the mixture. This type of waste fits the non-exempt category listed in the regulatory determination as “oil and gas service company wastes, such as . . . spilled chemicals, and waste acids.”

Field waste liquids are included in the non-exempt category of “unused fracturing fluids or acids.” There is no distinction made between pre-mixed fluids or wastes composed of the unmixed raw ingredients. Here again, the unused portions are not intrinsically derived from oil and gas exploration, development or production operations as this term is used in the statute, regardless of the intent in preparing the mixture.

For natural gas, primary field operations include those production-related activities at or near the wellhead and at the gas plant (regardless of whether or not the gas plant is at or near the wellhead) but prior to transport of the natural gas from the gas plant to market. Because of the movement of the natural gas between the wellhead and the gas plant is considered a necessary part of the production operation, uniquely associated wastes derived from the production stream along the gas plant feeder pipelines (e.g., produced water, gas condensate) are considered exempt wastes, even if a change of custody of the natural gas has occurred between the wellhead and the gas plant. Some wastes generated at this production stage may not be uniquely associated with the natural gas production stream and are, therefore, not exempt (e.g., pump lube oil, waste mercury from meters and gauges). Similarly, soils contaminated by spoils of wastes that are not uniquely associated with production operations, such as soils contaminated by mercury from gauges, are not exempt wastes.

Wastes generated at compressor stations and facilities located along the transportation and distribution network downstream from the gas plant or at the market end of the transportation system are not covered by the E&P exemption. These wastes are not uniquely associated with oil or gas exploration and production and are not exempt. In addition, wastes generated by non-production related activities (i.e., manufacturing) that may occur at a gas plant are not exempt. These non-exempt manufacturing activities include operations that go beyond the removal of impurities from the raw gas and the physical separation of the gas into its component fractions. Manufacturing activities would be those that are similar to petrochemical plant operations, such as the cracking and reforming of the molecular structures of the various gas fractions and the addition of odorants or other substances. The end point of the scope of the exemption for natural is in the gas plant once manufacturing begins or, if no manufacturing occurs, at the point at which the natural gas leaves the gas plant for transportation to market.

The production of elemental sulfur from hydrogen sulfide gas at a gas plant is considered treatment of an exempt waste (i.e., the hydrogen sulfide gas is a uniquely associated toxicity of the exempt waste and produces a saleable product). As such, this process is similar to crude oil reclamation and any residual waste derived from the hydrogen sulfide remains exempt.

ii. Bevill/Mining Exemption

Mining, milling and processing operations involve generation and handling of overburden, waste rock, tailings, spent ore, and other wastes. As previously noted, besides the Bensten Amendment, Congress also enacted the “Bevill Amendment” in 1980, exempting temporarily¹² from hazardous waste regulation “solid waste from the extraction, beneficiation, and processing of ores and minerals.”¹³ The exemption still exists, although EPA has narrowed the exemption for smelting and refining waste¹⁴. Extraction and beneficiation wastes and overburden returned to the mine site remain excluded, but additional future scrutiny by EPA of exclusions may lead to efforts to further limit the types of wastes that are excluded.

Mine wastes are not exempt under Bevill if they independently exhibit the characteristics of hazardous materials or if the agency determines they “may present an imminent and substantial endangerment to health and the environment.”

iii. Mixture of Exempt/Non-Exempt

The RCRA regulations provide that the commingling of any listed hazardous waste with a non-hazardous waste generally renders the entire mixture a hazardous waste. The intent of this mixture rule is to prevent avoidance of hazardous waste regulations through dilution. For example, discarding a listed hazardous waste (e.g., a half-empty container of a listed solvent) in a reserve pit could cause the otherwise exempt pit contents to become a hazardous waste and result in the expensive closing of the reserve pit under RCRA hazardous waste

¹² i.e., until EPA definitively determined which wastes fit the criteria.

¹³ 42 U.S.C. § 6921(b)(3)(A)(ii).

¹⁴ *Environmental Defense Fund v. EPA* 852 F. 2d 1316 (D.C. Cir. 1988), *cert. denied*, 489 U.S. 1011 (1989); 55 Fed. Reg. 2322 (1990).

regulations. Likewise, the mixing of a characteristic hazardous waste with an exempt waste could render the entire mixture a hazardous waste. Unused commercial products are not exempt wastes when disposed and if hazardous (or potentially hazardous) should not be made to completely use commercial products, return them to their vendor if they are not fully used, or segregate them from other waste for management and disposal.

2. Arkansas Pollution Control & Ecology Commission Regulation 1

Arkansas Pollution Control & Ecology Commission Regulation 1 provides ADEQ authority for regulating saltwater disposal systems, permitting those systems, inspections of systems and mandates closure of all pits related to E&P wastes within a 100 year floodplain of any stream within the state of Arkansas. ADEQ has applied Regulation No. 1 to salt water produced by oil and gas exploration or drilling. “Regulation for the Prevention of Pollution by Salt Water and Other Oil Field Wastes Produced by Wells in All Fields or Pools” was promulgated pursuant to the Arkansas Water and Air Pollution Control Act (“AWAPCA”). The regulation is aimed at requiring operators who discharge salt water or other “oil field wastes” from their wells to construct and obtain a permit for an approved disposal system for such wastes from ADEQ to be located at the existing site. Par. 3(g) defines a “new existing field or pool” as “any oil and gas field and/or pools found, brought in, established after July 1, 1957, or currently in use.” The agency has previously argued that Regulation No. 1 is not applicable to water based fluids in oil or gas exploration or drilling.

3. Naturally Occurring Radioactive Materials¹⁵

Some scale includes naturally occurring radioactive materials (“NORM”). NORM may be brought to the surface with produced water. Scale may be “generated” as a waste during workovers, either with scale-specific treatments or incidentally during other treatments; during completion, scale would generally not yet have precipitated on downhole equipment and so would not be a waste concern, EPA has stated as many as one-third of domestic oil and gas wells may produce some radium-contaminated scale. The geological location of the oil reserve and the type of production operation strongly influences the prevalence of NORM accumulations. Depending on the formation, the mineral salts that constitute scale may be radioactive as a result of uranium or thorium and their decay products in the formation. Radium present in the formation is more soluble than uranium or thorium and most likely to become mobilized by the liquid phases in the reservoir.

As produced from the well during the following workovers, scale could be dissolved or suspended in acid or other fluids and would be characterized by its basic structure (e.g., sulfates, silicates, and carbonates of barium, calcium, strontium). Scale may also be present on downhole tubing and equipment removed and destined for disposal, reuse, reclamation, or repair during downhole repair and maintenance operations. Scale dissolved or suspended in workover fluids (or, not relevant to this report, in produced water) may precipitate or settle in the bottom of tanks

¹⁵ Some E&P activities can generate naturally occurring radioactive materials (“NORM”). RCRA excludes certain radioactive materials (i.e., radioactivity is not a hazardous characteristic). However, a radioactive waste may be regulated by RCRA if the material exhibits one of the four characteristic attributes of a hazardous waste.

or treatment vessels, pits and other storage or disposal units. As a result, sludges and bottoms may also contain NORM as a result of workovers.

ADEQ regulatory jurisdiction does not encompass NORM. To the extent there is any state involvement, it would derive from the Arkansas Department of Health (“DOH”) which has personnel that address radiation issues. Certain Arkansas statutes give DOH authority to regulate the possession, use, transfer and disposal of NORM that does not fall under the jurisdiction of the federal Nuclear Regulatory Commission.

No federal environmental regulations address NORM. However, certain federal Occupational Safety and Health Act provisions may be triggered in some instances.

4. Safe Drinking Water Act

The Safe Drinking Water Act (“SWDA”) is the primary federal statute that governs injection wells. The SDWA required the EPA to promulgate regulations to protect drinking water sources from contamination through underground injection, but directed the agency not to prescribe requirements which would impede oil and gas production. The federal SWDA sets forth requirements for the protection of drinking water supplies.

Later amendments to the original statute provide for the regulation of underground injection of wastes and fluids for enhanced recovery of crude oil. The Underground Injection Control (“UIC”) program was established to classify certain well types and to develop requirements for each to protect underground sources of drinking water (“USDW”) from contamination. A USDW means an “aquifer or its portion: which supplies any public water system; or which contains a sufficient quantity of ground water to supply a public water system; and (A) currently supplies drinking water for human consumption; or (B) contains less than 10,000 milligrams per liter total dissolved solids; and which is not an exempted aquifer.”

The UIC program establishes five classes of wells and the technical criteria for the operation of each¹⁶. The five classes of injection wells are:

Class I – wells used to inject hazardous waste and industrial and municipal disposal wells which inject fluids beneath the lowermost formation containing an underground source of drinking water

Class II – wells which inject fluids in connection with natural gas storage, conventional oil or natural gas production, enhanced recovery of oil or natural gas, and storage of hydrocarbons which are liquid at standard temperature and pressure¹⁷

Class III – wells which inject for extraction of minerals;

¹⁶ 40 C.F.R. §146

¹⁷ RCRA E&P exempt hazardous wastes cannot be disposed of in a Class II well. 40 C.F.R. § 144.6(b). The RCRA exempt wastes might include produced water, drilling cuttings, well completion fluids, etc.

Class IV – wells used by generators of hazardous or radioactive waste disposing of the waste into or above a formation which, within ¼ mile contains an underground source of drinking water, and all other disposals of hazardous waste; and

Class V – all injection wells no included in Classes I, II, III, and IV.

In most cases, E&P waste management facilities use Class II wells (specifically designed for oil and gas E&P wastes), although in some cases, other well types may also be applicable. Class II injection wells are broadly defined as related to oil and gas injection activities. Activities in this class relate to the disposal of fluids associated with oil and gas E&P, enhanced recovery operations, and the storage of liquid hydrocarbons.

The federal UIC program establishes minimum requirements under Section 1422 and 1425 for effective state UIC programs. Class II UIC programs are administered by the states where EPA has approved primary enforcement authority (primacy), or are directly implemented by EPA where the states have not sought or received approval for their UIC program. Amendments to the SWDA in 1980 further allowed a state with an existing regulatory program to obtain primary enforcement authority from EPA as long as the state was able to demonstrate that its program was effective in protecting underground sources of drinking water (“USDW”), rather than adopting the complete set of federal requirements.

Under Section 1425 of the Act, EPA approved Class II injection programs are given greater flexibility to demonstrate that the program is effective in protecting USDWs. States with UIC program primacy receive federal funding for program implementation. AOGC and ADEQ have been granted primacy by EPA for their respective roles in permitting underground injection wells.

The AOGC’s Class II injection wells focus has traditionally included the construction and integrity of the well, confinement of injection streams, and engineering and geologic considerations involved in the protection of underground sources of drinking water. Minimum UIC Class II well requirements¹⁸ involve specific construction, operation, and closure standards, as well as provisions for ensuring that the owner, operator and/or transferor of the well maintain financial responsibility and resources to plug and abandon the well. Included are casing and cementing requirements based on the depth to the injection zone, location of aquifers, and estimated injection pressures as well as other possible considerations.

Operational standards involve regular mechanical integrity tests (“MITs”); monitoring of injection pressure, flow rate, and volume; monitoring of the nature of injected fluid as needed; and annual reporting of monitoring results. Closure procedures must be performed in accordance with an approved plugging and abandonment plan, which includes the placement and composition of cement plugs, the amount of casing to be left in the hole, the estimated cost of plugging, and any proposed tests or measurements.

¹⁸ 40 C.F.R. § 144.

The 2005 amendments to the SDWA exempted hydraulic fracturing (fracking) operations from regulation under the SDWA. Second, underground injection in oil and gas operations was defined so as to alleviate the EPA from regulating threats to drinking water from fracking fluids unless diesel fuel additives are used; this remains a discretionary regulation of diesel fuel additives on the part of the agency.

5. Regulation of Petroleum/Gasoline/Diesel/Industrial Oil Product/Tanks Used by E&P Facilities

a. Which Underground and/or Above Ground Storage Tanks are Regulated?

i. RCRA Subtitle I Underground Storage Tank Regulations

The Subtitle I petroleum underground storage tank regulations usually do not apply to :

- Pipeline facilities, including gathering lines, regulated under (i) the National Gas Pipeline Safety Act of 1968, (ii) the Hazardous Liquid Pipeline Safety Act of 1979, or any intrastate pipeline facility regulated under state laws comparable to the provisions of law in (i) or (ii) above;
- Surface impoundments, pits, ponds, or lagoons;
- Storm or wastewater collection systems;
- Flow-through process tanks;
- Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
- Storage tanks situated in an underground area, such as a basement, cellar, mineworking, drift, shaft or tunnel, if the storage tank is situated upon or above the surface of the floor;
- Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;
- Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Sections 307(b) or 402 of the CWA;
- Equipment or machinery that contains a regulated substance for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- UST systems with a capacity of 110 gallons or less

- UST systems that contain a de minimis concentration of regulated substance; and
- Emergency spill or overflow containment UST's that are expeditiously emptied after use.

i. SPCC

As will be discussed, the primary regulations applicable to above ground tanks holding these products are the CWA Spill Prevention Control & Countermeasure ("SPCC") regulations.

b. Applicability of Arkansas Petroleum Storage Tank Trust Fund? (Movable Tanks)?

6. Comprehensive Environmental Response, Compensation and Liability Act

The federal Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") or "Superfund" regulates the clean up of hazardous substance releases into any part of the environment, including air, water, and land. It requires the reporting of hazardous substance releases, as well as the location of hazardous storage, treatment, and disposal sites. The statute also established the Superfund, a trust fund to pay for hazardous waste clean up, derived from taxes imposed on oil and chemicals, as well as fines and penalties levied by the EPA. The authority for these taxes expired several years ago and now draws on general revenue to fund this program¹⁹.

a. Applicability of Bensten/Bevill Exemptions to CERCLA Hazardous Substances?

Oil and gas and mine wastes that contain hazardous constituents may not be excluded from CERCLA under the Bensten/Bevill amendments. They can be a CERCLA "hazardous substance" despite the Bevill or Bensten amendments if they have constituents that fall within any of the subparagraphs under the definition, including those referring to substances regulated under the CAA and the CWA. In *Eagle-Picher*, the court rejected the argument that uranium mining wastes near Midland and Churchrock, NM and flyash from the combustion of coal in Virginia could not be hazardous substances under CERCLA²⁰. In a 1993 ruling in *United States v. Iron Mountain Mines, Inc.*²¹, the federal district court concluded that mine wastes are excluded from CERCLA coverage, casting some doubt over the applicability of Bevill. However, after *Iron Mountain* was decided by this federal district court, the Ninth Circuit Court of Appeals in *Louisiana-Pacific Corp. v. ASARCO, Inc.*²² decided that releases of Bevill-

¹⁹ The taxing authority expired several years ago. However, Congress is currently considering whether to reinstate these taxes.

²⁰ *Eagle-Picher*, 759, F. 2d at 926-30.

²¹ 812 F. Supp. 1528 (E.D. Cal. 1992)

²² 24 F. 3d 1565 (9th Cir. 1994), *cert. denied*, 513 U.S. 1103 (1995).

excluded wastes may create CERCLA liability and the *Iron Mountain* court allowed plaintiffs' CERCLA claims, and the doubt created by the federal district court decision no longer exists.

b. Petroleum Exclusion

Congress specifically excluded from the CERCLA definition of “hazardous substances” petroleum including crude oil (or any fraction thereof not specifically designated as a hazardous substance), natural gas and natural gas liquids including refined and unrefined gasoline. The CERCLA “petroleum exclusion” is an important exemption for the oil and gas extraction industry. Under the “hazardous substance” definition, “petroleum, including crude oil or any fraction thereof,” is exempted unless specifically listed or designated under CERCLA (CERCLA section 101 (14)). Subsequent interpretation has concluded that listed hazardous substances that are normally found in crude oil, such as benzene, do not invalidate the exemption unless the concentration of these substances is increased by contamination or by addition after refining. However, specifically listed RCRA waste oils (e.g., F010, and K042 through K048) are subject to reporting requirements if spilled in excess of their established Reportable Quantities (“RQs”)²³. Further, the courts have basically restricted the exclusion to spills or other releases strictly of oil.

In other words, the CERCLA petroleum exclusion is only applicable to the natural hydrocarbon stream as it occurs in the reservoirs and is raised to the surface. The CERCLA petroleum exclusion usually does not include oilfield wastes such as drilling mud, produced waters, most drilling mud additives, many chemical solvents, fracturing acids and painting wastes. Many of these wastes may constitute CERCLA “hazardous substances.” Moreover, if crude oil becomes mixed with a hazardous substance before disposal, it can lose the protection afforded by the CERCLA petroleum exclusion.

c. Liability Scheme

CERCLA seeks to establish a comprehensive governmental response to actual or threatened hazardous substance releases. The statute is predominantly concerned with orphaned facilities where ownership is undetermined and the site is closed or no longer operating as it once was and sited owned or operated by persons who do not have the financial resources or who are unwilling to undertake appropriate response action. CERCLA also provides a federal cause of action to recover the costs incurred for responses to releases. This cause of action was intended for the federal government response program, but extends to any potentially responsible party (“PRP”). PRPs are able to seek restitution from each other should any of them pay all or part of the clean costs. PRPs are broken into four distinct classes:

- i. Current owners and operators;**
- ii. Owners and operators at the time of disposal;**

²³ CERCLA has a reporting requirement by the person in charge of a vessel or facility if there is a release of hazardous substances equal to or greater than a specified reportable quantity as specified by the regulations. 40 C.F.R. § 302.6(a). The report must be made as soon as there is knowledge that a release exceeding the reportable quantity has occurred.

- iii. Generators of the substances; and**
- iv. Transporters of the substances²⁴.**

There are four requirements necessary to establish liability under CERCLA:

- v. A determination must be made that the site involved is a “facility,”²⁵ under the definition of the statute;**
- vi. A “release” or “threatened release” as defined by the statute of a “hazardous substance” must have occurred at the site;**
- vii. The government or a private party must have incurred response costs as a result of the release; and**
- viii. There is a determination that the individual or entity is a PRP.**

7. The Clean Air Act

The Clean Air Act (“CAA”) is the comprehensive federal statute that regulates air emissions from area, stationary, and mobile sources. The statute requires that EPA establish National Ambient Air Quality Standards (“NAAQS”) to protect public health and the environment. The goal of the CAA is to set and achieve NAAQS in every state by 1975. The setting of maximum pollutant standards was coupled with directing the states to develop state implementation plans (“SIPS”) applicable to appropriate industrial sources in that state.

Regardless of the federal air provisions, states (including Arkansas) retain the authority to apply more stringent regulations to sources of air emissions if they are concerned that emissions present risks to human health in particular cases. States likewise retain the authority to address certain emissions from well sites as a part of regulations to address nonattainment with NAAQS (which has, for the most part, not been a problem in Arkansas²⁶).

a. National Emission Standards for Emission of Hazardous Air Pollutants

The CAA program to control major sources of pollutants has established limits called the National Emission Standards for Hazardous Air Pollutants (“NEHAPS”). The standards must be met by installing the Maximum Achievable Control Technology (“MACT”) for each source²⁷. Smaller sources of pollutants that are under common control and are located in close proximity to perform similar functions are considered as one source of emissions.

²⁴ 42 U.S.C. § 9607(a)-(c).

²⁵ This term is broadly defined and probably includes any place or area that hazardous substances are located.

²⁶ Certain areas of Arkansas may have ozone NAAQS non-attainment issues.

²⁷ 42 U.S.C. § 7412(n)(4). MACT natural gas E&P sources include:
Emission controls may be required for
HAP emissions if following located at a major source.

The CAA NESHAP applies MACT in order to reduce the emissions of hazardous air pollutants (“HAP”) at facilities classified as major sources. Some oil and natural gas production and natural gas transmission and storage facilities are major and area sources of HAP emissions. Key aspects of the 40 C.F.R. 63 Subpart HH MACT Rule include:

- MACT standard published on June 17, 1999 for oil and gas production source category;
- Oil production – wellhead to lease custody transfer;
- Gas production – wellhead to and including gas processing plant;
- Applies to major sources of hazardous air pollutants.

Oil and gas exploration and production activities emit some volatile organic compounds (VOCs”) and nitrogen oxide²⁸. The CAA provides that oil and gas wells, and in some instances pipeline compressors and pump stations, are not aggregated together to determine if they are subject to the provisions that establish NEHAPS and thus require MACT. MACT exempt facilities include:

- Facility exclusively processes black oil (<40 API gravity, < 1750 SCF/bbl);
- Facility is a natural gas production facility with <650 MSCFD gas and <250 BOPD oil production;
- These facilities must be upstream of lease custody transfer to be exempt; and
- These are area sources.

The primary HAPs released by the oil and gas industry are benzene, toluene, ethyl benzene, and mixed xylenes (“BTEX”) and n-heptane. The technology requirements involve the following emission points: process vents on glycol dehydration units, storage vessels with flash emissions, and equipment leaks at natural gas processing plants. Additional requirements include the installation of air emission control devices, and adherence to test methods and procedures, monitoring and inspection requirements, and recordkeeping and reporting requirements.

MACT rules are potentially applicable to oil and gas production, natural gas transmission storage facility turbines, process heaters and reciprocating internal combustion engines, which may affect gas operations. The rules only apply to major sources so they might not affect small producers.

b. New Source Performance Standards

CAA New Source Performance Standards (“NSPS”)²⁹ may also affect oil and gas exploration and production facilities. Standards apply to devices used at these facilities, including gas turbines, steam generators, storage vessels for petroleum liquids, volatile organic

Sources include:
Glycol dehydration units (EG, DEG, TEG)
Storage tanks with flash emissions
Equipment leaks at natural gas processing plants.

²⁸ HAPS of concern include Benzene, Toluene, Ethylbenzene, Zylenes, N-Hexane and 2,2,4 –Trimethylpentane (iso-octane).

²⁹ 40 C.F.R. § 60.

liquid storage vessels, and gas processing plants. Requirements will depend on whether the region in which the particular facility is located is in compliance with the NAAQS and whether Prevention of Significant Deterioration (“PSD”) requirements apply.

c. Arkansas Air Permits

Some mining operations may trigger a requirement to obtain an air permit. ADEQ Regulation No. 18 applies to minor sources of criteria air pollutants and all sources of air contaminants. Except in certain special instances, the requirement to obtain a permit is only triggered by an Arkansas³⁰ source that actually emits the following amounts of relevant air pollutants:

Twenty-five tons per year or more of particulate matter;
Fifteen tons per year or more of PM₁₀; or
Twenty-five tons per year or more of any other air contaminant.

A few Arkansas quarries have, in the past, been deemed in violation of various Arkansas air requirements. For example, Washington County Quarry was deemed by ADEQ to be operating a site without an air permit. A Consent Administrative Order (“Order”) negotiated to resolve the matter stated that various crushers, screens, etc., utilized at the site subjected it to the federal CAA NSPS for non-metallic mineral processing plants. Another example is Rogers Group, Inc. which allegedly violated its air permit in 2007. The Findings of Fact of the Order indicated that the company owned and operated a rock crushing plant. However, the facility was also apparently subject to the previously referenced federal CAA NSPS. Also, in the early 90s, Rock Producers, Inc. allegedly violated its air permit. This facility was denominated a stone aggregate processing plant.

8. Water Discharges Statutes

a. Federal Clean Water Act

Onshore exploration and production facilities may be subject to five aspects of the Clean Water Act (“CWA”): national effluent limitation guidelines, stormwater regulations³¹, and wetlands regulations, Spill Prevention Control and Countermeasure (“SPCC”) requirements, and Section 311 Spill Reporting/Cleanup.

i. NPDES Permit Discharges

(A) Process Discharges

Oil and gas process related waste water includes produced water and sands, drilling mud, cuttings, completion fluids, oil and condensate spills, well treatment fluids and equipment maintenance fluids.

³⁰ The trigger amounts may differ in other states.

³¹ Non-process related wastewater discharges include contaminated stormwater.

Arkansas facilities have been required, since the early 1970's, to obtain both a federal NPDES and an Arkansas water permit. Arkansas obtained delegation of the CWA NPDES program in November, 1986. Therefore, since 1986, Arkansas facilities have obtained NPDES permits from the ADEQ as opposed to EPA.

A substantial portion of the substantive and procedural framework for the Arkansas NPDES permit program is found in Regulation No. 6. The regulation incorporates by reference the majority of the federal NPDES regulatory provisions. Consequently, the Arkansas NPDES regulatory provisions track, to a great extent, the federal program. Regardless, the state's operation of the CWA program places it in the position of addressing interpretational questions or making policy decisions that inevitably arise on a periodic basis.

An individual or site specific NPDES permit must be obtained for certain discharges³² from a pollutant³³ from an oil and gas facility³⁴. Process discharge from oil and gas wells are categorized into "onshore," "offshore," "coastal," "stripper," and "agricultural" sub-categories. Operations include production, field exploration, drilling, well completion and well treatment activities. The federal NPDES regulations provide:

There shall be no discharge of waste water pollutants into navigable water from any source associated with production, field exploration, drilling, well completion or

³² The CWA NPDES permitting program prohibits the discharge from a "point source" of any pollutant into the waters of the United States unless that discharge meets specific requirements set forth in the CWA (33 U.S.C. §§ 1311(a), 1362(14)). Unlike point source discharges, nonpoint source discharges are not defined by the CWA. Nonpoint source pollution has been described as "nothing more [than] a [water] pollution problem not involving a discharge from a point source." At least in Arkansas, nonpoint pollutants are often from farming run-off silviculture and construction activities. *Am. Wildlands v. Browner*, 260 F.3d 1192, 1193-94 (10th Cir. 2001 (quoting *National Wildlife Fed'n v. Gorsuch*, 224 U.S. App. D.C. 41, 693 F.2d 156, 166 n.28 (D.C. Cir. 1982)). Specifically, an NPDES permit must be acquired if five jurisdictional elements are present: (1) a person (2) adds a (3) pollutant (4) to navigable waters (5) from a point source. The prohibition of point source discharges in the absence of an NPDES permit is an obligation separate and distinct from the requirements that the facility discharge comply with applicable effluent limitations generally constitute the restrictions applicable to a facility's discharge. See *Sierra Club v. Cedar Point Oil Co.*, 73 F.2d 549, 550 (5th Cir. 1996). The CWA defines the term "effluent limitation" in part as "any restriction established by a state or the administration on quantities, rates and concentrations of chemical, physical, biological and other constituents which are discharged from point sources into navigable waters . . ." 33 U.S.C. § 1362 (ii) (1994). A point source is defined by the CWA as "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged 33 U.S.C. § 1362(14). In order for point source discharges to comply with the CWA, such discharges must adhere to the terms of a NPDES permit issued pursuant to the CWA 33 U.S.C. § 1342. NPDES permits issued by the EPA, or by authorized state agencies such as ADEQ.

³³ The addition of a pollutant has been interpreted broadly in the energy context in some instances. For example, in 2003 in *Northern Plains Res. Council v. Fidelity Exploration & Development Co.*, a federal district court in Montana addressed:

- Extraction of methane gas from coal seams in Montana;
- Fidelity pumped groundwater and discharged into river;
- Groundwater was salty and contained chemicals equaling pollutants.
- The court held unaltered groundwater produced in association with methane gas extraction and discharged into river is a "pollutant" within meaning of CWA.

³⁴ 40 C.F.R. § 122.21.

well treatment (i.e., produced water, drilling mud, drill cuttings and produced sand)³⁵.

National effluent limitation guidelines have been issued for two subcategories of onshore (non-stripper) wells. The Onshore Subcategory guidelines prohibit the discharge of water pollutants from any source associated with production, field exploration, drilling, well completion, or well treatment³⁶. Agriculture and Wildlife Water Use Subcategory guidelines apply to facilities in the continental United States west of the 98th meridian for which produced water may be used beneficially for irrigation or wildlife propagation. For facilities in this subcategory, produced water may be discharged into navigable waters so long as it does not exceed limitations for oil and grease, and is put to use for agricultural purposes. Discharge of waste pollutants excluding produced water is prohibited³⁷

(B) Stormwater Discharges

The question of whether a NPDES stormwater discharge permit is required sometimes arises with regard to the following equipment³⁸:

- (1) Compressors, dehydrators, or other equipment installed on an intrastate transportation pipeline;
- (2) Production gathering systems;
- (3) Hydrocarbon production, exploration and associated storage facilities; and
- (4) Natural gas processing facilities.

The issue of when the NPDES stormwater rules are applicable to E&P activities was recently addressed in *Natural Resources Defense Council v. United States Environmental Protection Agency* (“NRDC”)³⁹. The Ninth Circuit Court of Appeals vacated and remanded the Federal Environmental Protection Agency (“EPA”) regulation that had exempted from National Pollution Discharge Elimination System. (“NPDES”) permitting requirements, storm water runoff from oil and gas related construction site runoff. EPA has not determined at this point how it

³⁵ 40 C.F.R. Part 435.32(a).

³⁶ 40 C.F.R. Part 435.30.

³⁷ 40 C.F.R. Part 435.50.

³⁸ E&P mining activities may also trigger stormwater permitting because of construction. A construction stormwater permit may be required if a certain number of acres are disturbed by grading, clearing and excavation activities. For example, pipeline construction might trigger the need for this permit. The construction site stormwater runoff control measure requires a permit seeker to implement and enforce program to reduce stormwater pollutants from small construction sites §§ 122.34(b)(4)(i)-(ii). It mandates erosion and sedimentation controls, site plan reviews that take account of water quality impacts, site inspections, and the consideration of public comments, and requires that construction site operators implement erosion, sedimentation, and waste management best management practices. The post construction new development measure requires permit seekers to address post-construction runoff from new development and redevelopment projects disturbing one acre or more §122.34(b)(5)(ii)(B). Stormwater often differs from process discharges in the timing of the release of the pollutants. The unique aspect of stormwater is the fact that the highest pollutant concentrations occur during the early part of the runoff event (also known as the “first flush”).

³⁹ 526 F.3d 591(9th Cir. 2008).

will respond to the *NRDC* decision. The effect of the *NRDC* decision on the ADEQ's permitting program is unclear.

The *NRDC* decision has created a question as to whether and what degree oil and gas exploration, development, production and other operations are exempted from the NPDES stormwater permitting requirements under the CWA despite provisions contained in the Energy Policy Act of 2005 ("Energy Act") which many in the industry had thought provided a broad exemption. The Energy Act had modified numerous existing statutes, in the process providing tax incentives and loan guarantees for energy production of various types and establishing "streamlined" permitting procedures for certain types of activities. Subtitle C of Title III of the Energy Act contains two important sections affecting oil and gas exploration and production activities.

Section 323 of the Energy Act attempted to clarify the NPDES stormwater permitting requirements under programs administered by the federal EPA and the exemption previously contained in the CWA by adding to definitions contained in the federal statute. Specifically, the statute added the following new definition of "oil and gas exploration and production" to Section 502 of the CWA:

(24) Oil and Gas Exploration and Production. — The term 'oil and gas exploration, production, processing or treatment operations or transmission facilities' means all field activities or operations association with exploration, production, processing or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities.

This new definition was intended to clarify and potentially broaden the scope of the coverage of an exemption from NPDES from stormwater permitting found in Section 402(1)(2) of the CWA. Section 402(1)(2) provides:

The [EPA] Administrator shall not require a [National Pollutant Discharge Elimination System("NPDES")] permit, nor shall the Administrator directly or indirectly require any State to require a permit, for discharges of stormwater runoff from mining operations or oil and gas exploration, production, processing or treatment operations or transmission facilities, composed entirely of flows which are from conveyances or systems of conveyances (including, but not limited to pipes, conduits, ditches and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

Prior to adoption of the Energy Act, EPA had taken the position that construction activities associated with oil and gas operations were not exempt from the NPDES permit program. EPA had issued a series of statements expressing concern about the potential of sediments leaving oil and gas construction sites causing pollution of the nation's streams. The definitional change provided by the Energy Act clarified that "construction activities" were eligible for the stormwater permitting exclusion found in Section 402(1)(2). However, the language is not a categorical permit exclusion for all stormwater, but only extends to stormwater which is "not contaminated by contact, with, do[es] not come into contact with any overburden, raw material, intermediate products, finished product, byproduct, or waste products" located on the oil and gas site.

The issue of what constitutes "contamination by contact:" or "contact" with such materials was left undefined, and likewise the CWA contains no definition of overburden, raw material, intermediate products, finished product, byproduct, or waste products. In 2006, EPA published a rule amending the regulations to further clarify the CWA § 402(1)(2) exemption from NPDES permit requirements for oil and gas activities. The federal agency asserted in the 2006 rule that the 2005 Energy Act's amendment to the CWA created an absolute exemption for stormwater discharge of sediment, whether or not such discharge would result in a water quality standard violation.

The *NRDC* decision seems to agree that uncontaminated stormwater discharges from oil and gas construction activities are exempt. However, the *NRDC* court held that EPA's claim that the Energy Act established an absolute exemption was arbitrary and capricious. *NRDC* vacated the EPA's final rule and remanded the matter for further proceedings consistent with the decision — meaning that the Court ruled that there was not an exemption to the NPDES permitting requirements for stormwater runoff from oil and gas-related construction sites contaminated only with sediment if the discharge of sediment contributes to a water-quality violation.

The *NRDC* decision leaves the permit exemption for all oil and gas activities (including construction) in limbo. The court ultimately rejected an interpretation that would allow without permits the discharge of sediments resulting from construction where such a discharge would cause a violation of water quality standards. However, the *NRDC* did not resolve what are the boundaries of what constitutes uncontaminated stormwater, or more precisely, what constitutes stormwater that has been "contaminated by contact with" or had "contact with" "overburden, raw material, intermediate products, finished product, by product, or waste products" — which would fall outside the permitting exemption.

The further effect of the court's ruling will not be known unless and until EPA promulgates a revised final rule that survives further judicial challenge. It may be reasonable to expect EPA to revise its rule to require that oil and gas companies obtain NPDES permits for stormwater discharges of sediment that will likely result in a water quality standards violation. Regardless, the court's ruling does not affect the statutory language in the Act. EPA now states on its website that Section 402(1)(2) of the CWA clearly exempts most construction activities at oil and gas sites from the requirement to obtain NPDES permit coverage for stormwater discharges. The statutory language, however, conditions this exemption upon such stormwater not being contaminated by contact with or coming into contact with listed materials.

ii. SPCC

Oil and natural gas production facilities are subject to the oil spill provisions of the CWA and operators of well sites must therefore prepare SPCC plans for their well sites. More than a specified amount of oil can be stored on the site and if spilled the oil could enter a surface water in harmful quantities. In other words, an oil and gas production, drilling, or workover facility will be subject to Spill Prevention Control and Countermeasure (“SPCC”) requirements if it meets the following specifications:

The facility could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines, and have:

- (1) A total underground buried storage capacity of more than 42,000 gallons;
- (2) A total aboveground oil storage capacity of more than 1320 gallons; or
- (3) An aboveground oil storage capacity of more than 660 gallons in a single container.

SPCC applicability is dependent on the tank’s maximum design storage volume and not “safe” operating or other lesser operational volumes. The SPCC rule defines an onshore production facility to include all wells, flowlines, separation equipment, storage facilities, gathering lines, and auxiliary non-transportation-related equipment and facilities in a single geographical oil or gas field operated by a single operator.

Petroleum related facilities have often been the subject of federal EPA CWA SPCC enforcement actions. For example EPA has fined Robinwitz Oil Company of Tulsa, Oklahoma \$3,300 for allegedly violating SPCC regulations. A federal inspection of the company’s Big Eagle oil production facility located in Osage County, Oklahoma, on February 17, 2009 allegedly revealed the company had failed to inspect and provide documentation of required inspections of tanks, piping, valves, supports and other facility equipment as required by SPCC regulations. The inspection also allegedly found the company had failed to provide required training and discharge prevention procedures for oil handling personnel and failed to adequately describe the physical layout of the facility, also required by SPCC regulations. The EPA proposed and the company agreed to a \$3,300 fine.

All facilities subject to SPCC requirements must prepare a site-specific spill prevention plan that incorporates requirements specified in 40 C.F.R. Part 112.7. For production facilities, these include considerations for the following processes and procedures:

- Drainage;
- Tank materials;
- Secondary containment;

- Visual inspection of tanks;
- Fail-safe engineering methods for tank battery installations;
- Tank repair and maintenance;
- Facility transfer operations;
- Inspection and testing measures;
- Record-keeping;
- Security; and
- Personnel training.

The plan must discuss spill history and prediction (i.e., the anticipated direction of flow). The SPCC plan must be approved by a Registered Professional Engineer who is familiar with SPCC requirements, be fully implemented, and be modified when changes are made to the facility (e.g., installation of a new tank). Regardless of whether changes have been made to the facility, the plan must be reviewed at least once every three years, and amended if new, field-proven technology may reduce the likelihood of a spill.

The SPCC plan must also address oil drilling and workover facility equipment. This portion of the plan requires that the equipment be positioned or located so as to prevent spilled oil from reaching navigable waters, that catchment basins or diversionary structures be in place, and that blowout preventers (“BOPs”) are installed according to state regulatory requirements.

The SPCC may exempt wastewater treatment in certain instances. The SPCC rule’s wastewater treatment exemption states that the production of oil is not wastewater treatment for the purposes of 40 C.F. R. § 112.1(d)(6). The EPA’s position has been that the focus of the separation process in oil production is on removing water from oil, as opposed to removing oil from water. EPA believes the goal of an oil production, oil recovery or oil recycling facility is to maximize the production or recovery of oil, while eliminating impurities in the oil, including water, whereas the goal of a wastewater treatment facility is to purify water.

It is EPA’s position that neither an oil production facility nor an oil recovery or recycling facility treats water, instead, they treat oil. For purposes of the wastewater treatment exemption, produced water is not considered wastewater, and treatment of produced water is not considered wastewater treatment. Therefore, a facility that stores, treats, or otherwise uses produced water remains subject to the rule. At oil drilling, oil production, oil recycling, or oil recovery facilities, treatment units subject to the rule include open oil pits or ponds association with oil production operations, oil/water separators (e.g., gun barrels), and heater-treater units.

It is the federal agency’s position that open oil pits or ponds function as another form of bulk storage container and are not used for wastewater treatment. The prohibition extends to the discharge of oil into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deep Water Ports Act of 1974 or which may affect natural resources belonging to, pertaining to, or under the exclusive management authority of the United States, in such quantities as may be harmful as determined by the President⁴⁰

⁴⁰ 33 U.S.C. § 132(b)(3).

iii. Section 404 Wetland Permits

Section 404 of the CWA requires that any activities that result in the discharge of dredged or fill⁴¹ material into waters of the United States (which may include wetlands) must obtain a permit from the United States Corps of Engineers (“Corps”). This permitting program might be triggered by oil and gas related activities in wetlands such as drilling platforms or pipelines. Obtaining an individual permit can take over a year. Recent court cases and other actions have resulted in changes to the definitions of wetlands, meaning that the scope of activities and areas requiring a permit have been in a state of flux, which has led to additional delays caused by conflicting definitional interpretations.

The Corps has established nearly 40 general or nationwide permits (“NWP’s”) for some more limited categories of activities that will have minimal adverse effects on the environment. The processing time for activities approved under a NWP is usually much shorter. The Corps has issued two NWP’s that are often relevant to on-shore E&P operations. NWP No. 12 defines utility lines to include any pipelines for the transportation of any liquid for any purpose. NWP No. 20 addresses oil spill cleanup and applies to activities subject to the National Contingency Plan (“NCP”), provided, among other things, work is done in accordance with the facility’s SPCC plan and any existing state contingency plan.

iv. Section 311 Reporting/Cleanup

(A) Prohibition

Section 311(b)(3) of the CWA prohibits the discharge of oil “In harmful quantities as determined by the President under” § 1321(b)(4). Section 311(b)(4) instructs the President to issue regulations indicating “those quantities of oil . . . the discharge of which, at such times, locations, circumstances, and conditions, will be harmful . . .

Enforcement of these provisions is provided for by Section 311(b)(6). When a discharge of oil in violation of Section 311(b)(3) occurs, the Coast Guard may assess the owner, operator, or person in charge of the vessel or facility civil penalties, provided that notice and an opportunity for a hearing are provided⁴². Criminal penalties are possible in some instances⁴³

⁴¹ Fill material is any material used for the primary purpose of replacing an aquatic area with dry land or elevating the bottom of a body of water.

⁴² 33 U.S.C.A. § 300(b)(6).

⁴³ By way of example, the court in *Edward Hanoused, Jr. v. U.S.*, (Ninth Circuit Court of Appeals (2000)) addresses a scenario which:

- Supervision of rock quarry project; backhoe struck petroleum pipeline.
- Even though off duty and at home when accident occurred, conviction under CWA 33, U.S.C. §§ 1919(c)(1)(A), 1321(b)(3) for negligently discharging oil into a navigable water of the U.S.

(B) Reporting

The CWA requires the person in charge⁴⁴ of a facility or vessel to make an immediate report to the National Response Center of discharges of harmful quantities of oil⁴⁵ to navigable waters as soon as they have knowledge of the release. In effect, this means that any discharge of oil to waters of the United States must be reported to the National Response Center⁴⁶. Discharges of oil that violate applicable water quality standards and those that cause a film, sheen or discoloration of the surface of the water or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines must be reported⁴⁷. Criminal and civil penalties may be assessed for failure to notify.

9. Little Rock/Jacksonville Drilling Cuttings Ban/Preemption Issues

APC&EC Reg. 22 regulates the design, construction, operation, closure, etc., of non-hazardous waste landfills in Arkansas. The Arkansas Solid Waste Act statute preempts local controls except for certain specific types of regulations. The permissible areas of regulation are location, design, construction and maintenance⁴⁸. Regardless, the cities of Little Rock⁴⁹ and Jacksonville have enacted ordinances prohibiting the receipt of drilling cuttings by landfills in their corporate limits.

The Pulaski County Regional Solid Waste Management District rejected a request for a similar ban. The ADEQ also addressed this issue of the use of drilling cuttings as alternative daily cover as used at the same time Little Rock enacted the drilling cuttings ban. A copy of the Little Rock ordinance is found at Appendix “I” and the ADEQ memorandum addressing drilling cuttings at Appendix “II.”

a. Arkansas No Discharge Water Permits

Besides NPDES permits, ADEQ also operates a water permitting program deriving its authority from state statutory authority⁵⁰. For example, in 2007, ADEQ issued two “general permits” regarding oil and gas E&P operations, entitled: “Authorization to Construct, Operate, and Close the Pits Associated with Oil and Gas Well Exploration” (Permit No. 00000-WG-P; hereafter the “Pit Permit”), and “Authorization to Land Apply Drilling Fluids Under the Provisions of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, A.C.A. § 8-4-101, et seq.), and A.C.A. § 8-1-201, et seq.” (Permit No. 00000-WG-LA; hereafter

⁴⁴ The “person in charge” has been determined to be a supervisory employee who has sufficient authority to prevent, abate, or clean up a release. Employees not in a supervisory mode or without authority arguably have no duty to report a release even if they have knowledge of such release.

⁴⁵ Oil means oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

⁴⁶ These release and notification requirements are contained in 40 C.F.R. Part 110.

⁴⁷ 40 C.F.R. § 110.6.

⁴⁸ Ark. Code Ann. 8-6-222.

⁴⁹ BFI has challenged the Little Rock ordinance. It is arguing, among other things, that the ordinances are preempted.

⁵⁰ The activities that are potentially encompassed by this authority are

the “Land Application Permit”), collectively referred to herein as the “Permits.”

C. Arkansas Mining Statutory/Regulatory Issues

1. Suspension of Certain Gravel Mining Permits

An ADEQ decision to revoke a gravel mining permit was challenged *In the Matter of Guy King & Sons, Inc.*, Docket No. 07-002-P. The permit had been issued pursuant to Regulation No. 15. Two issues in the appeal to the Arkansas Pollution Control & Ecology Commission included whether gravel mining caused increases in water temperatures that exceeded the water quality standards for the Ozark Highland Ecosystem, which resulted in the lower stretch of Crooked Creek being placed on the 303(d) list of impaired waters? If the first question was answered in the affirmative, the second issue was whether the impact of the in stream mining on water temperatures was “cause” for suspension of the Guy King, Inc. permits pursuant to Regulation 15.

2. Arkansas Quarry Operation Reclamation and Safe Closure Act

a. Which Quarries are Covered?

Certain quarries are regulated by the Arkansas Quarry Operation Reclamation and Safe Closure Act (“Quarry Act”)⁵¹ that was enacted several years ago. The Quarry Act contains a “grandfather clause” exempting quarries operating prior to January 1, 1997 from the requirements of that statute. Consequently, if some portion of an existing mining operation was initiated prior to January 1, 1997, it is exempt from the provisions of the Quarry Act. The Quarry Act’s grandfather clause reads as follows:

Only new quarries or any land purchased or leased for a quarry after January 1, 1997, will be subject to this sub-chapter.

A logical interpretation of the grandfather clause provision is that the Quarry Act only applies to quarries established after the statute’s 1997 enactment date. As a result, the Quarry Act arguably envisions the continued grandfather status of existing quarries. A new quarry adjacent to or in the vicinity of the existing quarry negates the exemption. However, a transfer of the facility through a sale should not affect the grandfather status.

The term quarry is defined to include:

An excavation or pit from which stone is removed.

The breadth of this definition means that the acreage acquired to establish additional quarrying capacity would fit within the scope of the definition of the term “quarry.” This seems to reduce the possibility of the ADEQ or anyone else arguing that the new acreage is simply an extension

⁵¹ The term “quarry” is defined to mean an excavation or pit from which stone is removed. Ark. Code Ann. § 15-57-402(17).

of the existing quarry jeopardizing the exemption. Instead, the breadth of this definition arguably means that any division between the new and existing acreage constitute separate “quarries.” If so, the existing quarry exemption or grandfathering status would be preserved.

The legislative history of the Quarry Act also seems to address this issue. Former State Senator Bill Walters, sponsor of the Quarry Act, had testified in 1997 that, although the original intent of Senate Bill 397 was the regulation of as many quarries as possible, the Bill, and specifically the grandfather clause, underwent several amendments during the legislative process. The original proposed language of the Quarry Act stated which operations would be covered:

Any new quarries or expansion of the existing quarries,
undertaken after January 1, 1998 are subject to this act.

Another State Senator, Steve Bell, intervened at the committee level to amend the grandfather clause and in negotiation with Senator Walters rewrote the clause to ultimately read:

“Only new quarries or land purchased or leased after
January 1, 1997 will be subject to this act.

In other words, the Arkansas General Assembly clearly considered and discarded the idea that the expansion of the existing quarries negates their grandfather status.

The APC&EC Administrative Hearing Officer (“AHO”), Judge Michael O’Malley, addressed the Quarry Act grandfather clause in a Recommended Decision a few years ago⁵². Specifically, in 1999, Vulcan Materials purchased from Rock Products, Inc. five quarries located in various parts of Arkansas. These quarries were in operation on January 1, 1997 and continued operation. The ADEQ had advised Vulcan Materials that the quarries acquired from Rock Products would be subject to the Quarry Act despite the fact that they were in existence as of 1997 because of the transfer of ownership.

Vulcan argued that its subsequent purchase of the quarries did not negate or eliminate the grandfather exemption. The AHO⁵³ subsequently held that the sale or lease of an existing quarry did not negate the grandfather clause. This Recommended Decision indicates that the exemption will apply to existing quarries unless there is language clearly negating it.

b. Key requirements of the Quarry Act⁵⁴

The main elements of the Quarry Act include:

- i.** A Notice of Intent (“NOI”) to quarry must be submitted to the ADEQ;

⁵² *In the Matter of Vulcan Material Company* – Docket No. 01-001 – MISC – Order No. 5 (October, 2001).

⁵³ The AHO noted that the plain meaning of the statutory language is that the legislature intended to exempt quarries prior to January 1, 1997.

⁵⁴ Ark. Code Ann. 15-57-401 et seq.

- ii.** The NOI shall enable the quarry operator to continue quarrying as long as the required reclamation bond is in force;
- iii.** ADEQ issues the quarry operator a notice that there is an unconditional authorization to quarry in compliance with all laws and regulations for up to five years;
- iv.** The operator must provide certain notices pursuant to local newspaper and a public hearing may be held in certain circumstances;
- v.** Certain annual fees (\$25 per acre not to exceed \$1,000 per quarry) must be submitted annually to the ADEQ;
- vi.** The NOI will include information such as topographic quadmap, legal boundaries of the area to be quarried, property boundaries, all manmade natural structures, location of topsoil and spoil stockpiles, etc.
- vii.** The statute requires that the operator have a financial plan for reclamation which must include:
 - (a)** An estimate of reclamation costs; and
 - (b)** An acceptable bond or substitute security⁵⁵. The statute defines the circumstances in which self bonding may be used.
- viii.** A planned reclamation of all affected lands at the quarry site must be undertaken at an exhausted facility which will result in a lake, pasture, timberland, wetlands, or combination thereof;
- ix.** The quarry operator also must undertake certain safety measures such as fencing, berms, signage, etc.; and
- x.** A new NOI to quarry must be submitted if a change in the majority ownership of an operator occurs.

II. WATER QUANTITY ISSUES

Oil and gas operations utilize varying amounts of water. Therefore, water quantity issues can be important to these activities. This may be particularly true in some areas of Arkansas that currently, or may in the future, find themselves with inadequate supplies of water of sufficient

⁵⁵ ADEQ has not issued regulations to implement the Quarry Act. As a result, the ADEQ has not defined what constitutes “a substitute security.”

quality to support certain desired uses. Even in areas generally perceived to have sufficient water supplies, individual properties or facilities may have deficiencies.

The competition for limited water resources between various users will increase in some areas of Arkansas. The existence of an adequate supply may not be the only issue. Also relevant may be the accessibility of this resource. The accessibility issue can have three aspects. Whether a property or facility has the physical capability to transport or has access to water is important. However, the question of whether there is a legal right to a given quantity of water is equally important. Further, even if an adequate quantity of water is accessible the quality of the water must be determined.

The absence, availability, access to or presence of water can therefore be an important attribute of some properties or facilities. Whether this is a positive or negative depends of course on the circumstances. For example, a property adjacent to a large stream may enjoy the benefits of access to water for industrial, agricultural or recreational purposes. In contrast, a facility that is not contiguous to surface or groundwater may be deemed disadvantaged because of its dependence on a water source over which it has no control. Of course, the movement of water such as wet weather flows across a property may in some instances constitute an operational expense or liability.

Water related issues are accordingly a key concern for participants in a variety of transactions and projects. Determining the respective rights and obligations related to water can require the identification and analysis of some often subtle legal or regulatory issues. These issues range from a facility's ability to divert and use water to a clarification of access or property rights related to a non-navigable stream. A collection of common law decisions, statutes, and regulations alone or in combination must be reviewed to address these and a variety of other issues.

Concerns about the availability of water in some areas of the state have resulted in the enactment of limited state governmental controls. These statutory or regulatory controls could be expanded in the future and should be considered in evaluating those projects or transactions in which water use or management will play a key role. Also potentially relevant are programs enacted by the Arkansas legislature that provides incentives for certain types of water resource facilities. These programs might play a positive role in some projects.

A. Use and Availability of Water

1. General

Available water exists in two forms: surface water and groundwater. Surface water is found in lakes, rivers, streams, bogs, and marshes.⁵⁶ Groundwater occurs in aquifers and may be defined as water in the saturated zone that is under a pressure equal to or greater than atmospheric pressure⁵⁷. An aquifer is a water-bearing layer of rock that will yield water in usable quantity to a well or spring.

⁵⁶ CHARLES J. MEYERS & A. DAN TURLOCK, *WATER RESOURCE MANAGEMENT*, (2d Ed. 1980).

⁵⁷ HEATH, *BASIC BGROUNDWATER HYDROLOGY II* (U.S. GPO 1983)..

Though a limited resource, water is needed by many. Economies are dependent on it, as industry and agriculture cannot survive without it. Some industries evaluating various sites for a facility will consider the availability of quality water just as they do other factors such as energy costs. Cities and individuals demand it for drinking and other domestic purposes. Water is also in demand for its recreational and aesthetic value. As fishing, boating, and other water-related activities become more popular, many people desire to live or vacation on lakes and rivers. Additionally, wildlife and vegetation are dependent on water for their existence. Though in some areas water is abundant, others have a limited amount which may not be able to satisfy multiple or inconsistent uses.

In determining which of these competing uses have priority, the water's quality, quantity, and availability must be considered. Reliance primarily on common law litigation, where evidentiary presentations and outcomes are controlled primarily by the litigants and fact specific situations, and where different courts can render different and contradictory results provides little consistent basis or guidance for resolving disputes between competing but equally beneficial and reasonable uses. When faced with a proposed use, the first concern is the availability of water for that use. Even if the area is one with large amounts of water, the costs of gaining access to the supply may sometimes be prohibitive. If the water is in an aquifer, it must be pumped through a well, or if it is located off of a tract of land, the water must be transported. Storage is sometimes a necessary component of the system, particularly in the case of surface water. Such alternatives may not be economically or technologically feasible in some instances.

Even if access to the water is possible, the actual quantity or quality of the available water may be inadequate. Substances found naturally in a particular body of surface or groundwater may impair certain uses⁵⁸. For example, the Arkansas River contains high levels of chloride due to naturally occurring salt-bearing rocks in Oklahoma. Of course, pollutants generated by various human activities may also diminish the usefulness of some water bodies: a stream receiving an excessive amount of organic effluent from manufacturing facilities may not support a cold-water fishery because of the reduction in oxygen levels. Similarly, a groundwater aquifer could be threatened by contaminants generated by a variety of activities⁵⁹.

⁵⁸ Every surface waterbody receives pollutants resulting from human activities and/or natural events. A river, stream or lake's ability to satisfy certain uses may be eliminated by the presence of one or more pollutants. While waterbodies have the ability to naturally cleanse themselves, their capacity to do so will vary. A senate subcommittee noted in the 1960s:

Pollution degrades the physical, chemical, biological, bacterial and aesthetic qualities of water, the degree depending upon the kind and amount of pollution in relation to the extent and nature of reuse. Pollution can be just as effective as a drought or a consumptive withdrawal in reducing or in eliminating a water source.

Robert F. Blomquist, *To Stir Up Public Interest: Edmund S. Muskie and the U.S. Senate Special Subcommittee's Water Pollution Investigations and Legislative Activities, 1963-66 – A Case Study in Early Congressional Environmental Policy Development*, 22 COLUM. J. ENVTL. L 1, 24-25 n. 60 (1997).

⁵⁹ Activities potentially causing groundwater are numerous and diverse. They range from defective landfills and surface impoundments to leaking underground storage tanks. See Walter G. Wright, Jr., *In Storage Tanks We Trust: An Analysis of Their Role In Protecting The Environment and Small Business*, 13 U. ARK. LITTLE ROCK L.J. 417 (1991) (discussion of underground storage tank issues).

In addition to quality and availability, the quantity of available water must also be considered. The source of the water may be one that will be quickly depleted and slowly recharged. Additionally, the supply may not be a constant one, but may vary with the seasons. For example, during the hot summer months a decrease in quantity may result from evaporation losses or from increases in demand by irrigators or other users. This may be a key consideration since some uses require access to a minimum quantity of water over the entire year.

The amount of flow in a river or stream may also be a consideration for those facilities with current or future wastewater discharges. Dilution may be used to some extent by dischargers of certain pollutants to meet applicable water quality standards. Consequently, the material reduction of flow by water users may cause some dischargers to expend more on wastewater control.

2. Arkansas

Arkansas has abundant amounts of both ground and surface water.⁶⁰ However, the resource sometimes has to be allocated among multiple competing uses, including agricultural, industrial, and municipal demands. This human activity has a substantial impact on both the quantity and quality of Arkansas' water. When these quantity and quality issues are combined with the availability and location problems, Arkansas' supply of useful water does not appear as plentiful. The Arkansas Soil and Water Conservation Commission ("ASWCC") and the Arkansas Department of Environmental Quality should be considered two key sources of information about Arkansas water resources.

Arkansas uses approximately 4.76 million gallons of water per day, and this use is expected to increase by 140 percent as additional cropland is put under irrigation. Eighty percent of this demand is supplied by groundwater⁶¹. The majority of these groundwater withdrawals are used for irrigation purposes. Though Arkansas receives sufficient precipitation to recharge its ground and surface water supply, excessive withdrawals may be depleting groundwater sources in some areas of the state. For example, the pumping rate of the alluvial aquifer of eastern Arkansas exceeds the rate of recharge by as much as 17 percent. If this overdraft continues, well yields may fall, and ultimately, the aquifer may be a lost source⁶².

Inseparable from these quantity issues is the quality of water. The aquifer overdrafts are critical not only because the source is being depleted, but also because they may degrade the quality of the water. The large withdrawals may increase the salt content level, making it unfit for certain uses. Additionally, industrial discharges, as well as human and animal wastes, can, if excessive, harm water quality. The use of water to irrigate may, in some instances, increase the sediment levels.

Both Arkansas and federal programs exist whose goal is the protection of surface water quality through the attainment of water quality standards⁶³. Water quality standards are provisions

⁶⁰ *Arkansas Water Plan.*

⁶¹ *Arkansas Water Plan.*

⁶² *Arkansas Water Plan.*

⁶³ Clean Water Act, 33 U.S.C. § 1251, *et seq.*; Arkansas Water and Air Pollution Control Act, Act 472 of 1949 (as amended, codified at Ark. Code Ann. § 8-4-101, *et seq.*). Any facility discharging a pollutant through a point source into a navigable body of water must have a National Pollution Discharge System ("NPDES") permit. *See* 33 U.S.C. § 1301. The terms "pollutant" and "point source" are broadly defined. Arkansas administers this program pursuant

of federal or state law that list or determine the use or uses of a certain segment of a waterbody. The level of water quality that will be necessary to support the designated uses is determined by these standards⁶⁴. Arkansas, like other states, has set designated uses for most waterbody segments⁶⁵. Anyone considering the use of a given waterbody may want to review its designated uses.

Unlike surface water, neither the federal government nor Arkansas has a comprehensive program in place whose purpose is to maintain groundwater quality. Specifically, there are no mandatory groundwater quality standards nor any permitting program. Instead, groundwater quality is somewhat haphazardly protected by diverse state and federal programs that regulate specific activities that may generate potential contaminants. Those include, for example, sanitary landfill standards, underground storage tank requirements and pesticide use and disposal requirements⁶⁶.

While Arkansas has a shortage of groundwater in some areas, the state does have excess surface water⁶⁷. There has and continues to be interest in encouraging a greater use of surface water. The dilemma has been the fact that utilization of surface water is sometimes more expensive. The Arkansas legislature has therefore enacted a program that seeks to encourage greater use of surface water. It is intended to mitigate somewhat the cost of building the storage and collection infrastructure necessary to utilize surface water.

3. Applicable Legal Requirements

Water is clearly a resource necessary to all and subject to conflicting demands. As a result, questions involving ownership and the priority of various uses of water can arise in many situations. For instance, an attorney advising a client about the acquisition of property or a facility may need to determine what rights exist, if any, to any contiguous surface or groundwater. The importance of this issue would be driven by the proposed use of the property or facility and the corresponding water demand. The question might become more complicated if the proposed source of water is not contiguous to the property or located in a different watershed. Landownership patterns do not typically coincide with hydrological system boundaries⁶⁸.

Research in this area begins with the common law. Several key principles still govern many issues. Various Arkansas statutes and regulations supplement, and in some cases supersede, this body of caselaw. While they apply potential restrictions in limited instances, they also provide an opportunity for clarifying or quantifying available water rights.

to ADPC&E Regulation No. 6. A permit's effluent limitations are based initially on categorical technological controls. However, where necessary for the relevant segment of the waterbody to achieve specified water quality standards, the permit may contain more stringent effluent limitations.

⁶⁴ See generally, Clean Water Act, 33 U.S.C. § 1303, *et seq.*

⁶⁵ See ADPC&E Regulation No. 2.

⁶⁶ See ADPC&E Regulation No. 22 (sanitary landfill standards), ADPC&E Regulation No. 12 (underground storage tank standards), Federal Insecticide Fungicide and Rodenticide Act, 7 U.S.C. § 136, *et seq.* (pesticide use and disposal statutory requirement).

⁶⁷ *Arkansas Water Plan.*

⁶⁸ A typical exception may be multi-acreage federal properties.

a. Common Law

i. Navigability

A key initial issue in analyzing many water law issues is whether the waterbody is “navigable.” Whether a waterbody is navigable can be determinative of ownership of real property associated with a waterbody. The riparian owner upon a navigable stream, deriving title from the United States, takes only to the high water mark⁶⁹, the title to the bed of the stream being in the State⁷⁰; but the riparian owner upon a non-navigable stream is entitled to the center of it, ratably with the other riparian proprietors, the extent of the interest depending upon the frontage upon the stream⁷¹. If a body of water is navigable, it is considered to be held by the State in trust for the public⁷². Determining the navigability of a stream is essentially a matter of deciding if it is public or private property⁷³. Navigation in fact is widely regarded as the proper test of navigability⁷⁴.

The test for when waterways are navigable has evolved in the last century in Arkansas courts. The Arkansas Supreme Court in *Little Rock, Mississippi River and Texas Railroad Co. v. Brooks* explained that a stream must be navigable for a significant portion of a year:

[It is not necessary] that the stream should be capable of floating boats or rafts the whole, or even the greater part of the year. Upon

⁶⁹ The court in *Hayes v. State*, 496 S.W.2d 372 (1972) said the test to be used in determining the high water mark is: The banks of a river are those elevations of land which confine waters when they rise out of the bed; and the bed is that soil so usually covered by water as to be distinguishable from the bank by the character of the soil, or vegetation, or both, produced by the common presence and action of flowing water. But neither the line of ordinary high-water mark, nor of ordinary low-water mark, nor of a middle stage of water, can be assumed as the line dividing the bed from the banks. This line is to be found by examining the bed and banks. And ascertaining where the presence and action of water are so common and usual and so long continued in all ordinary years, as to mark upon the soil of the bed in a character distinct from that of the banks, in respect to vegetation, as well as in respect to the nature of the soil itself. Whether this line between the bed and the banks will be found above or below, or at a middle stage of water, must depend upon the character of the stream. But, in all cases, the bed of a river is a natural object, and is to be sought for, not merely by the application of any abstract rules, but as other natural objects are sought for and found, by the distinctive appearance they present; the banks being fast land, on which vegetation, appropriate to such land in the particular locality, grows wherever the bank is not too steep to permit such growth, and the bed being soil of a different character and having no vegetation, or only such as exists when commonly submerged by water.

⁷⁰ The states have near absolute authority limited only by the federal navigation servitude and Congress’ power pursuant to the United States Constitution commerce clause to control navigation.

⁷¹ *Lutesville Sand & Gravel Co. v. McLaughlin*, 181 Ark. 574, 575 (1930) (citing *Barboro v. Boyle*, 119 Ark. 377 (1915); *St. Louis, Iron Mountain & Southern R.R. Co. v. Ramsey*, 53 Ark. 314; *Rhodes v. Cissell*, 82 Ark. 367; *Little v. Williams*, 88 Ark. 37; *Glasscock v. National Box Co.*, 104 Ark. 154).

⁷² *Arkansas River Rights Comm. v. Echubby Lake Hunting*, 83 Ark. Ct. App. 276, 285, 126 S.W.3d 738, 744 (2003).

⁷³ *State v. McIlroy*, 268 Ark. 227, 234 (1980); *Arkansas River*, 126 S.W.3d at 743.

⁷⁴ *State v. McIlroy*, 268 Ark. 227, 234 (1980) (citing *St. Louis, Iron Mountain & Southern R.R. Co. v. Ramsey*, 53 Ark. 314).

the other hand it is not sufficient to impress navigable character, that there may be extraordinary times of transient freshets, when boats might be floated out. For, if this were so, almost all insignificant streams would be navigable⁷⁵.

The court continued by defining navigability specifically by making reference to the river's business purposes:

The true criterion is the dictate of sound business common sense, and depends on the usefulness of the stream to the population of its banks, as a means of carrying off the products of their fields and forests, or bringing to them articles of merchandise. If in its natural state, without artificial improvements, it may be prudently relied upon and used for that purpose at some seasons of the year, recurring with tolerable regularity, then, in the American sense, it is navigable, although the annual time may not be very long. Products may be ready and boats prepared, and it may thus become a very great convenience and materially promote the comfort, and advance the prosperity of the community. But it is evident that sudden freshets at uncertain times cannot be made available for such purposes. No prudent man could afford the expense of preparation for such events, or could trust to such uncertainty in getting to market. The result of the authorities is this, that usefulness for purposes of transportation, for rafts, boats, or barges, gives navigable character, reference being had to its natural state, rather than to its average depth the year round⁷⁶.

Therefore, Arkansas had adopted a definition of navigability that only took business and trade into account. With the evolution of public recreational uses for streams throughout the 20th century, the court tempered this definition to include such uses.

The Arkansas Supreme Court in *Barboro v. Boyle* seemed to indicate that the definition of navigability should be expanded to include public recreation in stating:

It is the policy of this State to encourage the use of its water courses for any useful or beneficial purpose. There may be other public uses than the carrying on of commerce of pecuniary value. The culture of rice is being developed in this State, and the waters of the lake could be used for the purpose of flooding the rice fields and for other agricultural purposes. As the population of the State increases, the banks of the lake may become more thickly populated, and the water could be used for domestic purposes. Pleasure resorts might even be built upon the banks of the lake and the water might be needed for municipal purposes. Moreover, the

⁷⁵ *Little Rock, Mississippi River and Texas R.R. Co. v. Brooks*, 39 Ark. 403, 409 (1882) (citations omitted).

⁷⁶ *Little Rock*, 39 Ark. at 409 (citations omitted).

waters of the lake might be used to a much greater extent--for boating for pleasure, for bathing, fishing and hunting, than they are now used⁷⁷.

As said in the opinion in the case just cited, "to hand over all these lakes to private ownership, under any old or narrow test of navigability, would be a great wrong upon the public for all time, the extent of which cannot, perhaps, be now even anticipated."

The court expanded this definition, specifically holding in *State v. McIlroy*⁷⁸ that the Mulberry River was navigable for the purposes of public use not because of commercial uses, but because of recreation:

It may be that our decisions did or did not anticipate such use of streams which are suitable, as the Mulberry is, for recreational use. Such use would include flatbottomed boats for fishing and canoes for floating -- or both. There is no doubt that the segment of the Mulberry River that is involved in this lawsuit can be used for a substantial portion of the year for recreational purposes. Consequently, we hold that it is navigable at that place with all the incidental rights of that determination⁷⁹.

In explaining the court's holding in *McIlroy*, the Arkansas Court of Appeals stated that "In 1980, [the former definition of navigability] was expanded by the Supreme Court [in *McIlroy*] to include consideration of the water's recreational use as well as its commercial use in determining navigability⁸⁰." The current test, therefore, combines both business aspects of navigability and recreation when determining if a stream is navigable⁸¹.

ii. Right to Use Water

In the United States, the use and allocation of surface water is generally governed by one of two common law doctrines: the prior appropriation doctrine or the riparian rights doctrine. The basic premise of the prior appropriation doctrine is that those who use⁸² the water first have a legal right to the continued use of that water⁸³. The discovery of gold in California resulted in water often

⁷⁷ *Lamprey v. State*, 52 Minn. 181, 18 L.R.A. 670, 53 N.W. 1139.

⁷⁸ "Since [*Barboro*] no case presented to us has involved the public's right to use a stream which has recreational value, but lacks commercial adaptability in the traditional sense. Our definition of navigability is, therefore, a remnant of the steamboat era." *State v. McIlroy*, 268 Ark. 227, 236 (1980).

⁷⁹ *State v. McIlroy*, 268 Ark. 227, 237 (1980).

⁸⁰ *Arkansas River*, 126 S.W.3d at 743.

⁸¹ Navigability may be addressed in other contexts. See *Land and Lake Tours v. Lewis*, 723 F.2d 961 (8th Cir. 1984) (holding Lake Hamilton navigable because the part of the Ouachita River which was obstructed to create lake was navigable giving Coast Guard jurisdiction).

⁸² The time when use of the water begins is established by the time when the water is first diverted from a surface waterbody. *United States v. State Water Resources Control Bd.*, 182 Cal. 3d 82 (1986).

⁸³ These rights are often denominated water rights. This is the right to use the water to divert it from its natural course. The right of property on water is usufructuary and consists not so much of the fluid itself as the advantage of its use.

being diverted from streams to be used on non-riparian lands⁸⁴. The doctrine of prior appropriation accommodates this usage⁸⁵.

Prior appropriation rights do not depend upon land ownership. The main requirement is that the user who is first in time is first in right and that the water be put to “beneficial use⁸⁶.” A user who is prior in time may exercise this right to the detriment of later users, even in times of shortage, provided the use is not wasteful⁸⁷. The prior appropriation doctrine approach is followed by the majority of states in the western United States where water tends to be more scarce⁸⁸.

The riparian rights doctrine, on the other hand, is followed by most of those states, including Arkansas, which are considered to have a more abundant supply of water⁸⁹. Under this doctrine, the right to use⁹⁰ water exists by virtue of the ownership of riparian land. Because all owners of land abutting the water course have equal rights to the water, each riparian is limited in terms of quantity and purpose to “reasonable use“ of the water. This test gives due regard to the rights of the other riparian owners and prohibits one riparian from using the water in a way that will cause “unreasonable damage to other riparian owners.”

B. Reasonable Use

In adopting the reasonable use theory, the Arkansas Supreme Court clarified certain aspects of the scope and extent of the doctrine. Fishing, swimming, irrigation, and recreation⁹¹ are all considered lawful uses. Among the lawful uses, the right to use water for domestic purposes, such as for household use, is superior to any other use; behind domestic use, however, all other lawful uses are equal. When one lawful use of water interferes with another, the reasonable use inquiry will be applied to the facts of that particular situation to determine if the interfering use should be enjoined or an equitable adjustment made. The reasonable use test will not allow one lawful use to destroy another lawful use.

Under the common law, riparian owners were prohibited from transferring water to an off-tract use⁹². The rationale is that water is not usually returned to the waterbody after use. In *Harrell v. City of Conway*, the city impounded water by constructing a dam across Cadron Creek. The City of Conway wanted to use that water as its municipal supply, and thus sought to enjoin rice farmers from taking water from the creek whenever the water depth fell below six feet. Without specifically adopting the reasonable use theory of riparian rights, the court noted the city’s plan to remove the water from the watershed and sell it commercially would not pass the reasonableness test.

⁸⁴ *United States v. State Water Control Bd.*, 182 Cal. App 3d 82 (1986).

⁸⁵ *Id.*

⁸⁶ The right to that water continues as long as the appropriator puts the water to beneficial use.

⁸⁷ Water uses are curtailed in reverse order of priority.

⁸⁸ For example, most of the surface water in West Texas has already been accounted for in various water rights permits.

⁸⁹ *See Harris v. Brooks*, 225 Ark. 436 (1955).

⁹⁰ Water rights are arguably use rights as opposed to the body of water itself.

⁹¹ Disputes between parties lawfully exercising rights to utilize a waterbody can sometimes involve nuisance issues. For example, *see Arkansas Water Ski Club v. Rostker*, 1995 Ark. App. LEXIS 66 (1995) (operation of ski club on leased lake property argued to interfere with another riparian’s use and enjoyment of his property and constitute a nuisance).

⁹² *See Harrell v. City of Conway*, 224 Ark. 100 (1954).

Though such transfer restrictions were intended to protect riparians, they also have the potential to discourage investment and economic development, and prevent maximum beneficial use of the water. Accordingly, the prohibitions on water transfers were slowly relaxed⁹³, and presently, Arkansas, like many states, has statutory and regulatory provisions that may, to a certain extent, supersede these common law restrictions.

Consistent with its approach to surface water, the Arkansas Supreme Court has also adopted the reasonable use rule for groundwater⁹⁴. Landowners can make reasonable use of underground water. As demonstrated in *Jones v. Oz-Ark-Val Poultry Co.*, this doctrine prevents one landowner from unreasonably harming other landowners. In that case, the Arkansas Supreme Court found that a poultry processing plant's use of subterranean water was unreasonable where it caused the defendant's well to run dry. The uncertainty and expense associated with groundwater modeling has probably limited the number of disputes to this point. Key considerations in assessing groundwater use probably include the nature and priority of the right, unexercised overlying rights, basin conditions, baseline pumping patterns, projected pumping, and reasonably foreseeable impacts on others who rely on the same source.

Though the reasonable use approach to surface and groundwater appears fair, the doctrine arguably sacrifices predictability. The reasonableness test is a subjective balancing of particular facts on a case-by-case basis⁹⁵. As a result, a riparian owner's rights are difficult to quantify. When a riparian tract is sold and the water put to a different use, the rights of the neighboring riparians may have to change to accommodate that new use so long as it is reasonable.

Even if the circumstances enable one to reliably quantify the available water rights at a given point of time, circumstances can change. Events beyond the control of the landowner could change the components used in the calculation. Such events might include the arrival of additional users of the waterbody. Likewise a drought or other event might reduce the amount of water deemed available under the reasonable use theory. Because of this difficulty in quantifying water rights, advising a client who requires access to a specified volume of water cannot be done with certainty in some instances.

The two primary concerns in a water allocation system are the ability to provide legal predictability and security of tenure. Although no water rights scheme can assure sufficient amounts of water under all conditions, water allocation arrangements can grant rights for a sufficient time and protect against interference from others. Such security is essential to assure reliable water supplies.

⁹³ See *Lingo v. City of Jacksonville*, 258 Ark. 63 (1975) (indicating that a transfer of groundwater would be permissible if no harm resulted to the overlying landowners); see also *Miller v. United States*, 492 F. Supp. 956 (E.D. Ark. 1980) (suggesting that an interbasin water transfer can take place when a surplus exists).

⁹⁴ *Jones v. Oz-Ark-Val Poultry Co.*, 228 Ark. 76 (1957).

⁹⁵ See *Harris v. Brooks*.

C. Federal Exceptions/Reserved Rights

The division or allocation of the right to use various amounts of water from a waterbody or area is generally accomplished pursuant to state common law and/or statute. However, these state laws may be superseded by federal provisions in certain instances. These exceptions must be considered in any effort to quantify the amount of water available from specific waterbodies or areas. The exceptions involve water used by more than one state, other countries or Native American tribes⁹⁶.

The doctrine of reserved rights is also relevant. Specifically, all rights that are not impliedly relinquished are retained. The United States will periodically withdraw land from the public domain. If so, it reserves the land for a federal purpose and appurtenant water then unappropriated is implicitly reserved to the extent necessary to accomplish the purpose of the reservation⁹⁷. The implied federal right vests on the date of the reservation and is superior to the rights of future appropriators⁹⁸. The United States Supreme Court has recognized implied federal reserved water rights for varied federal reservations, including national forests, monuments, parks, recreation areas, wildlife refuges, and Indian reservations⁹⁹.

D. Access and Ownership Issues

Though a riparian owner does not own a property interest in the water itself, ownership of the land underlying a body of water is an issue. The answer to this question turns on whether the body of water is considered “navigable.” The test for navigability is whether the body of water is potentially useful for commercial purposes, not whether it has actually been used for commercial purposes in the past¹⁰⁰.

The previously cited definition was expanded in *State v. McIlroy*, which involved the Mulberry River. The Arkansas Supreme Court held that the recreational value, as well as the commercial value of a waterbody, can be considered in determining navigability¹⁰¹. Moreover, a body of water does not have to be floatable year round. Rather, a waterbody is deemed navigable if it is capable of transporting materials for part of the year.

⁹⁶ Other federal programs such as the Endangered Species Act may mandate the availability of certain amounts of water to protect species or habitat.

⁹⁷ *Cappaert v. United States*, 426 U.S. 128, 138, 48 L.Ed. 2d 523, 96 S.Ct. 2062 (1976); see also *United States v. New Mexico*, 438 U.S. 696, 699-700, 57 L.Ed. 2d 1052, 98 S.Ct. 3012 (1978); *Denver I*, 656 P.2d 1, 17 (1982).

⁹⁸ *Cappaert*, 426 U.S. at 138. These water rights are not lost due to non-use or abandonment.

⁹⁹ See, e.g., *New Mexico*, 438 U.S. at 698 (the United States implicitly reserved appurtenant water necessary to accomplish the purposes of the Gila National Forest reservation); *Cappaert v. United States*, 426 U.S. at 139 (1952 presidential proclamation creating the Devil’s Hole National Monument impliedly reserved sufficient water to preserve the Devil’s Hole pupfish); *Colorado River Water Conservation Dist. v. United States*, 424 U.S. 800, 805, 47 L.Ed. 2d 483, 96 S.Ct. 1236 (1976) (the reserved water rights of the United States extend to Indian reservations, national parks, and national forests); *Arizona v. California*, 373 U.S. 546, 601, 10 L.Ed. 2d 542, 83 S.Ct. 1468 (1962) (the United States reserved water sufficient for the future requirements of the Lake Mead National Recreation Area, the Havasu Lake National Wildlife Refuge, and the Gila National Forest).

¹⁰⁰ *Barboro v. Boyle*, 119 Ark. 377 (1915).

¹⁰¹ *State v. McIlroy*, 268 Ark. 227 (1980). A recent Arkansas Attorney General’s opinion addressing various issues related to lake ownership is found at 95 Op. Att’y Gen. 226 (1995).

With a non-navigable stream, the common-law presumption is that a riparian landowner's property extends to the thread, or center, of the stream¹⁰². To rebut this presumption, a grantor must expressly reserve rights to the stream in the deed; describing the property as running "to the bank" of the stream is not enough to indicate such an intent.

The riparian owner of a navigable stream has rights only to the high-water mark¹⁰³, which demarks the bed from the bank¹⁰⁴. The state holds the ownership interest in the bed. The high-water mark is indicated by the existence of vegetation and the state of the soil. Thus, a riparian's rights include the right to free ingress and egress from his property to the water. However, unlike a landowner along a non-navigable body of water, a riparian owner on a navigable stream may not have the right to keep others out of the water in front of the riparian property or even the right to prevent others from using the shore between the high-water mark and the water's edge, as long as that use does not unreasonably interfere with the riparian owner's use. An interesting issue that has not been squarely addressed by the Arkansas courts is whether and under what circumstances the public may gain access to a non-navigable waterbody through a prescriptive easement.

In addition to considering the issue of who owns the bed, the determination of navigability may also answer the question of who may use the surface of the water. Because the bed of a navigable waterbody belongs to the state, the public has a right to use the surface. A riparian owner may not prevent anyone from such use unless that use unreasonably interferes with the property owner's use. Unlike a navigable waterbody, the private ownership of a non-navigable waterbody bed limits the use of the surface to riparian owners. The issue of whether certain lakes are "waters of the state" for other purposes such as Arkansas Game & Fish Commission boating enforcement is not always clear¹⁰⁵.

The method in which such a non-navigable waterbody is allocated among those owners is unclear. With regard to non-navigable lakes, some jurisdictions follow the rule that all riparian owners own to the center of the lake in a pie-shaped fashion and all possess equal rights to the enjoyment of the lake. However, some jurisdictions have recognized an exception for lakes which provides that when the deed describes property along easily identifiable boundaries, such as land lines or metes and bounds, the party owns the bed along those lines and may exclude others from the portion of the lake lying upon the landowner's land. Arkansas caselaw does not definitively address this issue.

E. Drainage Management

Water and its movement sometimes poses a problem for landowners. This is particularly true for wet-weather flows. A common dispute is the ability of a landowner to prevent surface water from flowing across his land. Because of the costs sometimes related to run-off, landowners sometimes view water in this form as an unwanted expense.

¹⁰² *Nilsson v. Latimer*, 281 Ark. 325 (1984).

¹⁰³ *Barboro v. Boyle*, 119 Ark. 377, 380 (1915).

¹⁰⁴ *Anderson v. Reames*, 204 Ark. 216 (1942).

¹⁰⁵ For example, see Arkansas Attorney General Opinion No. 98-233 (Oct. 28, 1998) (addressing legal status of lakes in Bella Vista Village and Hot Springs Village).

The law of surface water run-off in Arkansas gives a landowner the right to prevent surface water from coming onto his property, as long as he does not unnecessarily damage any neighboring land¹⁰⁶. In *Pirtle v. Opco, Inc.*, a rice farmer constructed a road that prevented run-off from flowing across his fields. This obstruction caused the plaintiff's land to flood and made it unfit for natural use. Referring to other, less injurious alternatives, the court found that the dam did unnecessarily damage the neighbor's property. The defendant was ordered to provide for the natural drainage of the water from the plaintiff's land.

Though a landowner may defend his property against surface run-off to a reasonable extent, he has no right to obstruct the flow of water within a natural watercourse¹⁰⁷. In *Boyd v. Greene County*, a farmer caused the flooding of a county road when he built a levee to divert run-off. Greene County brought suit, claiming that the run-off water was actually a watercourse, and the farmer, therefore, had no right to obstruct the flow without paying for the resulting damage. Stating that a natural watercourse has a definitive channel with a bed and banks, the court concluded that the evidence at trial indicated that the flow at issue was nothing more than surface run-off. The court, therefore, remanded the case for a determination as to whether the defendant could have chosen a less damaging way to defend against the run-off water.

F. Change of Stream/Waterbody Channel

The boundaries of a waterbody such as a river or stream can change over a period of time. The rules for determining the boundary line have been established by the common law. If the stream is non-navigable, the owners on each side of the stream own to the center of the stream before the avulsion, and they continue to own to the center of the dry stream bed after the avulsion. In *Nebraska v. Iowa*¹⁰⁸, the United States Supreme Court held:

When grants of land border on running water, and the banks are changed by the gradual process known as accretion, the riparian owner's boundary line still remains the stream; but when the boundary stream suddenly abandons its old bed and seeks a new course by the process known as avulsion, the boundary remains as it was, in the center of the old channel; and this rule applies to a State when a river forms one of its boundary lines.

The term avulsion is sometimes used synonymously with the term accretion¹⁰⁹. Riparian owners are owners of the additional land formed by accretion, which ownership encompasses both surface and mineral rights¹¹⁰. The Arkansas common law doctrine of accretion has been codified with the enactment of Ark. Code Ann. § 22-5-404 (acknowledging title vests in riparian landowners when land emerges by accretion from lakes or river beds). Further, the Commissioner of State Lands of

¹⁰⁶ *Pirtle v. Opco, Inc.*, 269 Ark. 862 (1980).

¹⁰⁷ *Boyd v. Greene County*, 7 Ark. App. 110 (1983). An interesting decision addressing the scope of a flowage easement and Lake Catherine is *Carvin v. Arkansas Power & Light Co.*, 14 F.3d 399 (8th Cir. 1993).

¹⁰⁸ 143 U.S. 359 (1892).

¹⁰⁹ In *Grief Bros. Cooperaage Corp.*, 341 F.2d 167 (8th Cir. 1965), the court noted: "unsurveyed land which has arisen from underwater to form accretion to surveyed riparian land becomes private property subject to taxation by separate assessment and description in accordance with extension of the lines of public survey."

¹¹⁰ *Swaim v. Stephen Production Co.*, 2004 Ark. LEXIS 588 (2004).

Arkansas is authorized to execute deeds to lands described in § 22-5-404 to riparian owners upon application and filing of proof of record ownership of adjacent lands and proper survey, conveying all right, title and interest of the State of Arkansas to lands as have emerged or may emerge to the mean high-water mark of any such stream or lake¹¹¹.

A gradual eroding or washing away is denominated as “reliction.” Any increase of soil or sand to land adjacent or contiguous to a water course formed by accretion becomes the possession of the riparian or littoral owner. Likewise, any erosion or reliction due to the gradual actions of nature become lands lost by the riparian or littoral owner.

In *Ryles v. Riffle*¹¹², the Arkansas Court of Appeals noted that:

. . . [W]hen land forms in navigable water within the original boundaries of the former owner of the land, title vests in the former owner. See *White v. J.H. Hamlen & Son Co.*, 67 Ark. App. 390, 18 S.W.3d 464 (1999). The purpose of the statute is to give title to the former owner when his land reforms as an island within the boundaries of his original grant. *Id.* When a stream changes its course gradually, i.e., by accretion, the boundaries of the riparian landowners change with the stream. *Id.* When a stream shifts suddenly, i.e., by avulsion, the boundaries of the riparian landowners do not change with the stream. *Id.* An avulsion is nearly always involved when an island forms spontaneously. *Garrison Furniture Co. v. Southern Enters., Inc.*, 245 Ark. 927, 436 S.W. 2d 278 (1969). In *Ward v. Harwood*, 239 Ark. 71, 387 S.W. 2d 318 (1965), the Supreme Court reconciled Act 282 of 1917, codified at Ark. Code Ann. § 22-6-202 (Repl. 1996), which mandates that all islands formed in navigable streams belong to the State, with Ark. Code Ann. § 22-5-403. Construing the statutes together, the Court interpreted Act 282 as applying only to islands formed within navigable streams that are not within the boundary lines of former owners.

The state’s inundation of another’s lands may in some circumstances put the state in possession of those lands, thereby allowing access by the public. The court in *Arkansas River Right Committee*¹¹³ noted:

When the waters of natural navigable lakes in this state are extended by artificial means so as to cause the land of riparian owners to be flooded, without their consent, and this condition is not merely temporary but is continued for a sufficient length of time for the standing waters to produce a distinctive new high-water mark for the water of the lake bed, this gives the State, as the owner of such lake

¹¹¹ Ark. Code Ann. § 22-5-405.

¹¹² Ark. Code Ann. § 22-5-403 (Repl. 1996).

¹¹³ *Arkansas River Rights Committee v. Echubby Lake Hunting Club*, 126, S.W. 3d 738 (2003).

bed, the possession of the lands so covered by the high-water mark The State has acquired title by prescription or limitation The inundation of [the club's] lands, under the circumstances, put the State in possession and as effectually foreclosed any private ownership and dominion in the [club]

G. Flowage Easements

Arkansas law recognizes flowage easements granting “an occasional right to flood and submerge lands¹¹⁴.” The extent of the rights granted can be important. This is particularly true in the event a flood or flow of water injures people or property.

In *Carvin v. Arkansas Power & Light Co.*¹¹⁵, two groups of landowners appealed from a summary judgment denying their claims for real and personal property loss caused by flood on Lake Catherine, which they claim resulted from the negligence of Arkansas Power & Light Company (“AP&L”). The federal district court had ruled that the landowners held the land subject to flowage easements in favor of AP&L. On appeal, the landowners argued that the easements did not affect their negligence claims¹¹⁶, that AP&L breached the statutory duty owed them, and was estopped from exercising its easement rights, and that AP&L breached its duty to warn the landowners of the flood.

The AP&L decision discussed the fact that the landowners held their property subject to flowage easements created by reservations in the deeds to their predecessors in title by outright purchase from their predecessors in title, or in one case, by court decree in a condemnation case. Various types of flowage easements were discussed in the opinion. Language in one of the flowage easements stated:

Use, to appropriate, to clear of trees, brush and other obstructions and to submerge by water the following described lands . . . these acreages being those portions of the above described tracts which would be flooded by or surrounded by waters impounded by a dam proposed to be constructed on the Ouachita River, when said waters are raised to an elevation The specified elevation varies from deed to deed.

The Eighth Circuit Court of Appeals ultimately stated:

The loss of property is most substantial and the result seems harsh. Yet we do deal with property, and we deal with those documents creating property interests which expressly created AP&L the right to flood the land. To couple this with an extremely heavy rainfall, indeed the heaviest recorded in at least 63 years. In view of the

¹¹⁴ *Jones v. Scott*, 256 Ark. 653 (1974).

¹¹⁵ 14 F.3d 399 (8th Cir. 1992).

¹¹⁶ Specifically, landowners claimed that AP&L was negligent in managing Lake Catherine's level, in that it opened the gates in Carpenter Dam without opening the Rammel Dam gates at the same time.

property interest created by the documents involving each of the landholders, we cannot place liability on AP&L in such circumstances.

H. Governmental Controls

Most eastern states, including Arkansas, are moving from primary reliance on the common law to some limited form of regulatory system (regulated riparianism) which focuses more on management of water resources (even if such systems are still characterized by significant restrictions on scope and common law riparian influences remain strong). The state of Arkansas has had in place limited statutory authority over water use since the 1950s. These authorities have been expanded somewhat in the last ten years. The ASWCC is the agency that administers the key water use authorities. It has promulgated several sets of regulations to implement these statutory authorities.

1. The General Use and Allocation of Water Resources: Ark. Code Ann. § 15-22-201, et seq. (2005) and Ark. Code Ann. § 18-15-702, et seq.

Ark. Code Ann. § 15-22-201, *et seq.* establishes the power of the ASWCC to issue permits for the construction of dams, issue certificates of registration for water diverted from streams, allocate water from streams during times of shortage, and conduct hearings and issue orders related to these other powers¹¹⁷. A permit issued by the ASWCC is necessary for the construction of a dam which impounds more than 50 acre-feet of water or which is more than twenty-five feet high. Before granting a permit for a dam, the ASWCC must give notice and allow interested parties to make their opinions known concerning the construction of the dam¹¹⁸. Other statutes addressing the erection of dams can be found at Ark. Code Ann. § 18-15-702, *et seq.*

Anyone who owns the land on either side of a non-navigable stream may erect a dam across the stream¹¹⁹. However, if the dam is likely to cause overflow of the stream to property owned by others, the builder must first file a petition in circuit court, and the judge may then issue an order providing for the erection of the dam, or, in his discretion, may consult a jury to get its opinion.

Ark. Code Ann. § 15-22-215 requires any person diverting water from a stream, lake, or pond to register that diversion with the ASWCC. Ark. Code Ann. § 15-22-221 gives the ASWCC the power to allocate water in periods of shortage, taking into consideration the priorities of sustaining life, maintaining health, and increasing wealth.

The ASWCC is also provided the authority to allow transfer of surface water to a non-riparian under specified conditions. The ASWCC must consider whether excess surface water is available for transfer to non-riparians in light of the future water needs of the basin of origin. A key issue is, therefore, what constitutes “excess surface water.” This is defined by the ASWCC regulations.

¹¹⁷ Ark. Code Ann. § 15-22-205.

¹¹⁸ An interesting case involving a dam dispute between different property owners involving the ASWCC is *Styers v. Johnson*, 19 Ark. App. 312, 720 S.W.2d 334 (1986).

¹¹⁹ Ark. Code Ann. § 18-15-704.

The Title III regulations provide the procedures for operating these programs and further delineate a variety of key terms. It addresses water diversion, registration allocation during shortages, and permits for intrabasin and interbasin transfers to non-riparians. Affected water users should recognize the need to maintain compliance with the relevant procedures. For example, a failure to register a covered diversion may jeopardize water rights during a shortage. Further, the procedural requisites for transfers to non-riparians should be carefully considered. This authority may provide the opportunity to avoid the common law uncertainty related to transfer to non-riparians.

Another set of ASWCC regulations relevant to water resources projects are found in Title VI (Rules for Water Development Project Compliance with the Arkansas Water Plan). Municipalities and regional water management districts are generally required to submit their water development proposals to ASWCC for approval as being in compliance with the Arkansas Water Plan. An example of a matter recently before the ASWCC pursuant to the Title VI rules is *In The Matter Of: Benton County Rural Development Authority, Area "B,"* WPC #950727-375 (Final Determination -- Arkansas Water Plan Compliance). It involved a review of an application by a water authority to determine compliance with the Arkansas Water Plan for a proposal to serve an area that includes the proposed regional airport in northwest Arkansas¹²⁰.

The setting of in-stream flows is the ASWCC's responsibility. However, the Arkansas Game & Fish Commission has undertaken efforts to recommend relevant in-stream flows to the ASWCC. The first flow setting exercise in the early 1990's involved the Arkansas River¹²¹. The second to be addressed was the White River. Fish and wildlife, navigation and upstream farming interests advocated the consideration of their interests in the ASWCC's setting of in-stream flow needs for the White River.

2. Arkansas Groundwater Protection and Management Act, Ark. Code Ann. § 15-22-901, et seq. (2005).

The Arkansas Groundwater Protection and Management Act¹²² gives the ASWCC the power to develop a comprehensive groundwater protection program¹²³. This statute allows the ASWCC to designate certain areas as "critical groundwater areas" and to require that a property owner have special "water rights" before he can withdraw groundwater from the property.

If the ASWCC designates an area as a critical groundwater area, property owners who already regularly take water from wells in that area may apply for a water right from the ASWCC and receive the right to withdraw water equal to the average quantity of water withdrawn over the past three years. For property owners who do not already take water from wells in an area designated as critical but who apply for water rights within the area, the ASWCC has broad discretion in determining whether any new water rights should be issued. The statute does not empower the ASWCC to regulate the withdrawal of groundwater from any well with a maximum

¹²⁰ The decision addressed a number of procedural and due process issues.

¹²¹ S. FLIPEK, *INSTREAM FLOWS FOR TROUT, PADDLEFISH AND A DELTA RIVER FISHERY: A 3 FOR 1 EXAMPLE*.

¹²² Ark. Code Ann. § 15-22-901, *et seq.* (2005).

¹²³ Ark. Code Ann. § 15-22-906.

flow rate of less than 50,000 gallons a day or for individual household wells used exclusively for domestic use. An example of the ASWCC's work in addressing the critical groundwater area issue is found in the January 1996 Record of the Designation Process *In Re: The Designation of the Sparta Aquifer Within Bradley, Calhoun, Columbia, Ouachita and Union Counties As A Critical Groundwater Area* No. CGWA 1995-1.

I. Governmental Incentives and Related Programs

1. Water Resource Conservation and Development Incentives Act, Ark. Code Ann. § 26-51-1001, et seq.

This program was enacted by the Arkansas legislature to provide income tax credits to farmers and other users of groundwater to encourage them to use surface water when available and to use all water more efficiently. An important distinction to keep in mind when reviewing this statute is whether the particular water-conservation project is located within a "critical groundwater area," which is defined as "those areas that are designated by the ASWCC pursuant to the Arkansas Groundwater Protection and Management Act, § 15-22-901."

Available tax credits. The available tax credits fall in three general categories:

- (i) Water impoundments. Sections 26-51-1005 and -1006 provide an income tax credit equal to 50 percent of the cost of constructing and installing an impoundment structure of 20 feet or higher to be used for storing water for agricultural, commercial, or industrial purposes. Key points include:

Limits on the credit. The credit cannot exceed in one year the lesser of the total income tax due or \$9,000.

Carry-over. The tax credit, if unused, can be carried over for up to nine years following the year in which it originated.

Note that unlike other sections of this statute, the credit is worth 50 percent of the cost of construction regardless of whether the water impoundment project is located in a "critical area" or not.

- (ii) Surface water conversion. Sections 26-51-1007 and -1008 provide income tax credits for costs involved in implementing projects which reduce use of groundwater and substitute the use of groundwater, in industrial, agricultural, and recreational settings. Key points include:

The credit is worth 50 percent of the cost of the project if the project is in a "critical area." The credit is worth 10 percent of the cost of the project if the project is not in a critical area.

Carry-over. The tax credit, if unused, may be carried over for a maximum of two years after the year in which it originated for projects not located in a critical area. For projects located in a critical area, the tax credit, if unused, may be carried over for a maximum of two consecutive taxable years for projects using water for agricultural or recreational purposes and a

maximum of four consecutive taxable years for projects using water for industrial or commercial purposes following the taxable year in which the credit originated.

Limits on the credit. The credit cannot exceed in one year the lesser of the total income tax due or \$9,000 for projects not located in a critical area. For projects located in a critical area, the credit cannot exceed in one year the lesser of the total income tax due or \$9,000 for projects using water for agricultural or recreational purposes and \$200,000 for projects using water for industrial or commercial purposes.

(iii) Land leveling. Section 26-51-1009 provides income tax credits for costs involved in leveling agricultural land in order to conserve irrigation water. The credit is worth 10 percent of the costs associated with leveling the land.

Limits on the credit. The credit cannot exceed in one year the lesser of the total income tax due or \$9,000.

Carry-over. The tax credit, if unused, may be carried over for a maximum of two years after the year in which it originated.

In order to obtain the tax credit under this statute, the taxpayer must obtain a certification from the ASWCC. If the ASWCC approves the tax credit, the taxpayer must file the certification with his/her tax return the first year in which he/she claims the credit. The water impoundment, surface water conversion, or land leveling project must be completed within three years after the ASWCC issues the certification or the tax credit will have to be repaid to the state Revenue Department. Costs associated with running the water project incurred after the initial issuance of the certification may be claimed for the tax credit, subject to the other limitations mentioned above.

2. Arkansas Private Wetland and Riparian Zone Creation and Restoration Incentives Act. Ark. Code Ann. § 26-51-1501, et seq. (2005).

The Arkansas Private Wetland and Riparian Zone Creation and Restoration Incentives Act¹²⁴ provide incentives to any taxpayer who develops projects to restore or protect wetlands and areas along the banks of rivers and streams. “Wetland” is a term defined by Section 404 of the Federal Water Pollution Control Act (“FWPCA”)¹²⁵.

The provisions of this program are similar in many respects to the terms of the Water Resource Conservation and Development Incentives Act. Any taxpayer who spends money developing or protecting wetlands or riparian areas is entitled to a credit in the amount of money spent¹²⁶. The annual credit may not exceed the lesser of the amount of corporate or individual income tax owed or \$5,000.

¹²⁴ Ark. Code Ann. § 26-51-1501, *et seq.* (2005).

¹²⁵ 33 U.S.C. § 1404.

¹²⁶ Ark. Code Ann. § 26-51-1505(b)(1).

In order to obtain the credit, the taxpayer must first obtain approval from the ASWCC and, when the tax return is filed, it must include with it a certificate of tax credit approval. If a taxpayer claims this credit, the conservation project must be functioning within three years of obtaining approval from the ASWCC and must be maintained for ten years.

3. The Arkansas Wetlands Mitigation Bank Act, Ark. Code Ann. § 15-22-1001, et seq. (2005).

In order to promote the restoration and conservation of wetlands in Arkansas, the Arkansas Wetlands Mitigation Bank Act¹²⁷ creates “mitigation banks,” or publicly owned and managed wetland areas to offset losses to wetlands caused by activities which otherwise comply with state and federal law. Under this statute, when a permittee, operating under a permit issued pursuant to Section 404 of the FWPCA, is required to mitigate damages caused by dredging or filling in a wetlands areas, the permittee may fulfill his obligation to mitigate through the purchase of credits issued by the ASWCC¹²⁸. The credits are then to be used by the ASWCC to restore and maintain the publicly owned mitigation banks¹²⁹.

4. Regional Water Distribution Act, Ark. Code Ann. § 14-116-101, et seq. (2005).

The Regional Water Distribution Act¹³⁰ passed by the Arkansas legislature in 1957, provides for the creation of public, nonprofit regional water distribution districts for the purposes of acquiring, purifying and treating, transporting, and distributing water resources¹³¹. The Arkansas Supreme Court in *Lyon v. White River--Grand Prairie Irr. Dist.* clarified that besides municipal and industrial uses, the statute included the establishment of water districts for agricultural purposes¹³².

To establish a water district, one hundred or more qualified voters living or owning property within the boundaries of a proposed district must petition the circuit court in the county in which the proposed district is located. The petition must include a statement demonstrating the need for the water district, the location of the district, and the expected benefits of the district¹³³.

The circuit clerk must send the petition to the ASWCC who will review the petition and make findings as to whether the water district can achieve its purposes and whether it would promote the general welfare and aims of this statute. The ASWCC is then required to send its findings to the circuit court, which will give notice in the newspaper to residents of the district and

¹²⁷ Ark. Code Ann. § 15-22-1001, et seq. (2005).

¹²⁸ Ark. Code Ann. §§ 15-22-1002 - 1004.

¹²⁹ *Id.* at § 15-22-1004.

¹³⁰ Ark. Code Ann. § 14-116-101, et seq. (2005).

¹³¹ Ark. Code Ann. § 14-116-102. Public nonprofit regional water distribution districts may be organized under this chapter for any one (1) or more of the following purposes:

¹³² 281 Ark. 286, 664 S.W.2d 441 (1984).

¹³³ In *City of Fort Smith v. River Valley Regional Water District*, 37 S.W.3d 631 (2001) a petition was challenged on the basis that it failed to identify a particular project to acquire water from one or more sources provided in Ark Code Ann. § 14-116-201 (i.e., a water district cannot be created for planning without an identified project that can be evaluated. The court held that the proposed district does not have to have a concrete plan identify particular water source, but only that there is a water source from which distribution might be made.

will determine, after a public hearing, whether the water district should be established¹³⁴. Before or after the circuit court issues an order approving a proposed district, any property owner may petition the circuit court to have his property excluded from the district for agricultural irrigation purposes.

Under the terms of the statute, a regional water district is governed by a board of no fewer than three directors, each of whom is a registered voter residing within the district¹³⁵. After it is created and the board established, the water district has the power to acquire, store, and sell water; to construct facilities to store water; to acquire property for use in distributing water; to borrow money and issue bonds; and to exercise the right of eminent domain.

5. Arkansas Water Resources Development Act of 1981, §§ 15-22-601, *et seq.* (2005).

The Arkansas Water Resources Development Act of 1981, §§ 15-22-601, *et seq.* gives the ASWCC broad powers to develop and regulate water resources projects and provides for the issuance of bonds to finance its projects¹³⁶. To issue the bonds, the ASWCC must first submit a plan to the Governor detailing how the revenue from the bonds would be used. After consulting with the Arkansas Legislative Council, the Governor then has discretion as to whether to order that bonds be issued.

The bonds are payable from the general revenue of the state as defined by the Revenue Stabilization Law¹³⁷. These bonds are exempt from state income, inheritance, and property taxes.

J. Water Supply Development/Construction: Statutory/Regulatory Issues

1. Meeting the Demand for Water

A governmental or private entity that is attempting to meet an increase in demand for water has two basic options: (1) reduce demand¹³⁸, or (2) increase supply. The “supply” of water available to the government or private entity can be increased by either constructing the infrastructure to access a new source (i.e., build a reservoir, drill a well, etc.) or purchase water from another entity¹³⁹. The construction of certain types of facilities (i.e., dams, etc.) can obviously involve significant costs, (condemnation, construction, etc.) uncertainties (i.e., ability to obtain the required permits) and lead time.

¹³⁴ Ark. Code Ann. § 14-116-205.

¹³⁵ Ark. Code Ann. § 14-116-301.

¹³⁶ Ark. Code Ann. §§ 15-22-606 - 615.

¹³⁷ Ark. Code Ann. § 19-5-101, *et seq.* Ark. Code Ann. § 15-22-616.

¹³⁸ The decrease might be accomplished by conservation practices or literally limiting the quantity of water utilized for certain uses.

¹³⁹ An additional (more limited) option is the reuse of effluent from wastewater treatment plants for irrigation and industrial purposes. Further, losses from leaking pipes and other conveyances might be reduced providing some gains.

2. Development of New Water Facilities/Supplies

The development of new facilities to extract, store, impound, and/or transport water can involve complex technical, political, legal and regulatory issues. A few strategies to consider to attempt to ease the development process might include:

- a. Can water be purchased or otherwise acquired in the desired amounts in lieu of developing a new facility?
- b. Start permitting early
- c. Pursue all required permits simultaneously (if possible)
- d. Recognize construction/design issues

i. **Development of water supply facilities are often complex projects.**

The pressure to expedite all facets of these projects (i.e., design, bidding, construction, etc.) can lead to errors. For example, in *Water Works Bd. of the City of Fort Payne v. Jones Environmental Construction*¹⁴⁰, a city water works solicited bids for expansion of a water treatment plant. The winning construction firm subsequently discovered it had erred in calculating its bid. The firm determined in its haste to meet the bid deadline that it had neglected to include the cost of rock excavation (\$68,000).

ii. **Example of Limitation of Liability Issue:**

- Design-build certain plant
- 72-HP performance test or deemed acceptance
- Liquidated damages for shortfall in performance guarantees
- Unit failed to achieve start-up and never passed 72-HP test
- Owner asserted limitation of liability applied only if performance test was run and failed
- Language of clause established “Maximum Limit of Liability Under the Agreement”
- Payment of liquidated damages subject to limitation of liability was owner’s “Exclusive Remedy” for failure to meet performance guarantee
- Court concluded limitation of liability clause was enforceable

¹⁴⁰ 533 So. 2d 225 (1988).

- e. **Recognize that significant water source development activities could face greater challenges on certain waters. They potentially include those that involve:**
 - i. Presence of Endangered Species Act critical habitat and/or threatened or endangered species
 - ii. Interstate or interbasin transfers
 - iii. Waters whose substantial use will engender opposition by state/federal authorities, tribes or significant environmental organizations

K. Achieve Early Support by State/Local Authorities

APPENDIX I

1 **Section 1.** Any and all petroleum hydrocarbon based drill cuttings generated from any drill
2 site or drilling operation is hereby banned from dumping, disposal or being accepted for final
3 disposition at all landfills within the geographic boundaries of the district.
4

5 **ADOPTED:**
6

7 _____
8 **APPROVED:**
9

10 _____
11 _____
12 **FLOYD G. VILLINES, III**
13 **CHAIRMAN ATTEST:**
14

15 _____
16 **MAYOR MARK STODOLA**
17 **SECRETARY TREASURER**
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APPENDIX II

**Arkansas Department of Environmental Quality
Regulatory Determination on Handling Drill Cuttings**

Drill cuttings are a by-product of the drilling process. A drill bit cuts a borehole and drilling mud is circulated through the inside of the drill. Drill cuttings are the rock that is ground up as the borehole is drilled. The drill cuttings are carried to the surface in the drilling mud. The cuttings are removed from the drilling mud so the mud can be reused or disposed of. The remaining drill cuttings are coated with drilling mud. Oil based drilling mud contains, among other things, diesel, a petroleum distillate, which contains aromatic hydrocarbons, including naphthalene and alkylbenzenes.

The Solid Waste Management Regulation 22 provides that petroleum contaminated soils may be disposed in a class I landfill if the material meets the requirements for an acceptable waste established in the landfill's Hazardous and Unauthorized Waste Exclusion Plan. Reg. 22.708(a). Regulation 22 also allows such petroleum contaminated soils to be used as daily cover on interior working faces that drain directly into the facility leachate collection system. Reg. 22.708(b). The Arkansas Department of Environmental Quality (ADEQ) has determined that drill cuttings, which are wastes resulting from drilling processes, must be properly disposed in a class 1 landfill and may not be used for daily cover.

The following terms are defined in Reg. 22.102:

Petroleum contaminated soils means those soils which have been physically, chemically or biologically altered by gasoline, diesel, kerosene, heating oil, jet fuel or any other petroleum product.

Process Waste means solid waste resulting from an industrial or manufacturing processing operation.

Special materials means any materials that require special handling precautions and disposal procedures by the landfill owner or operator beyond the normal activities associated with landfill operations. Special materials includes those items listed in Chapter 7 of this Regulation and other process wastes and conditionally exempt small quantity generator wastes requiring special handling procedures.

Whether or not drill cuttings, coated with oil based mud, meet the definition of petroleum contaminated soils is arguable. ADEQ believes these materials should be characterized as process wastes based on the source of the material. In 1991, the legislature enacted a law requiring the Arkansas Pollution Control and Ecology Commission (Commission) to adopt criteria for the disposal of petroleum contaminated soil in landfills in order to protect public health and the environment. The criteria were to:

- 1) Define the characteristics of the petroleum contaminated soils that can be disposed of in permitted landfills;
- 2) Define the characteristics of landfills suitable for receipt of petroleum contaminated soils;
- 3) Assure, to the extent practicable, that reasonable landfill capacity is available for disposal of petroleum contaminated soils;
- 4) Consider the financial impact of such criteria on small businesses which need to dispose of petroleum contaminated soils;
- 5) Consider whether affordable alternatives are available for the treatment or disposal of petroleum contaminated soils; and
- 6) Be protective of public health and the environment.

Ark. Code Ann. § 8-6-1205. On May 22, 1992, the Commission adopted amendments to the Arkansas Solid Waste Management Code acknowledging the determining role regulated storage tanks played in the provisions for the disposal of petroleum contaminated soils. The Commission's Minute Order stated the Regulated Storage Tank Division "through cooperation with the Solid Waste Division, established standards for the disposal of petroleum contaminated soils." Minute Order 92-37. The regulations adopted by the Commission in 1992 provided that petroleum contaminated soils generated from a regulated underground storage tank release could be disposed in a class 1 landfill if authorized by the department. Written authorization would not be provided until a request for disposal was submitted with composite sample results consisting of 4 grab samples for every 50 cubic yards of material to be disposed. The contamination limits specified for the waste material could not exceed 400 ppm for BTEX (benzene, Toluene, Ethyl Benzene, and Xylene) and 1000 ppm for TPH (total petroleum hydrocarbons). Additionally, petroleum contaminated soils could not be used as daily cover. The 1992 amendments also addressed soils contaminated with petroleum products, other than from a regulated storage tank release. These soils were required to meet the same standards as those established for a release from a regulated storage tank as well as testing to ensure that the soils were not a hazardous waste. Finally, any contaminated soil required prior approval from the Department before it could be placed in a landfill. Clearly, the 1992 regulation's primary focus was the waste generated during the clean-up of releases from regulated storage tanks. See attached Exhibit A-1 through A-3. The focus on the source of petroleum contaminated soils being clean-ups has remained constant throughout the regulation's history.

In 1995, the Solid Waste Management Code underwent a major revision to become known as the Solid Waste Management Regulation 22. Although the changes adopted to ensure that solid waste management in Arkansas conformed to the new federal Subtitle D regulations, which established standards and criteria for the design, operation, and closure of municipal solid waste landfills, were significant, the provisions for handling petroleum contaminated soils were largely unchanged. Only two changes were noted in the 1995 revisions. The first change removed the sampling protocol specified in the 1992 regulation. The second change gave the Department the authority to grant an exemption


to the “testing requirements” if it could be demonstrated that the waste was not a hazardous waste under Subtitle C of RCRA. During the public comment period for this rulemaking, a few commenters wanted to allow petroleum contaminated soils to be used as daily cover. The suggested change was not made. The response to comments indicated there was “no logical reason for exempting this waste from normal disposal practices. If the contaminated soil were to be allowed for use as daily cover, it would have to be stockpiled separate from the working area until applied and could potentially contaminate other soil or contribute to runoff from what might otherwise be uncontaminated runoff areas.” See attached Exhibit B-1 through B-2.

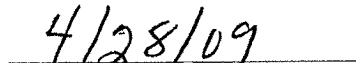
The regulations governing the disposal of petroleum contaminated soils remained largely unchanged from 1992 until 2005. In 2005, Regulation 22 was amended to simultaneously allow petroleum contaminated soils to be used as daily cover and eliminated the contamination limits established for the disposal of these soils in a class 1 landfill (see attached Exhibit C-2 and C-3). The impetus for this change in policy is not clear. However, it is clear that two safeguards were put in place, in the absence of any concentration limits. The first safeguard was the requirement to place petroleum contaminated soils used for daily cover on “interior working faces that drain directly into the facility leachate collection system;” the second was the requirement for the contaminated soils to comply with the landfill’s Hazardous Waste Exclusion Plan. Reg. 22.708 (a) and (b). Also, it is clear from the rulemaking record that petroleum contaminated soils are those generated from the remediation or clean-up of a spill, leak, or release. This is the pivotal point in properly characterizing this waste material and distinguishes petroleum contaminated soils from drill cuttings, which are a by-product of the drilling process.

Although, petroleum contaminated soils which meet the requirements of Regulation 22 are presently allowed to be used for daily cover, ADEQ has determined that drill cuttings generated during the drilling process are not appropriate for use as daily cover and must be disposed in a class 1 landfill for the following reasons. The purpose of daily cover is to “control disease vectors, fires, odors, blowing litter, and scavenging and to limit the generation of leachate.” Reg. 22.413(a). It is ADEQ’s experience that drill cuttings do not effectively eliminate odors. Additionally, drill cuttings have the potential to contaminate stormwater run-off from the landfill because these wastes have to be stockpiled prior to use as daily cover. The disposal of drill cuttings is a new issue resulting from the dramatic increase in natural gas drilling associated with the Fayetteville Shale Play since 2005. Although not all wells drilled use oil based drilling mud, according to the Oil and Gas Commission, over 800 wells were completed in the Fayetteville Shale formation since February 29, 2008. The quantity of wastes generated from drilling wells far exceeds that typically generated through the clean-up of contaminated soils from releases or spills. Stormwater runoff contacting drill cuttings stockpiled away from the active face may become contaminated by the drilling mud (diesel) on the cuttings. Because of the odor problem associated with the drill cuttings and the potential for runoff to contaminate waters of the state, ADEQ has determined that

drill cuttings are not appropriate for use as daily cover.

This regulatory determination does not preclude the treatment and subsequent use of drill cuttings as an alternative to disposal, including its potential use as alternative daily cover. However, any use of drill cuttings other than disposal in a Class 1 landfill requires ADEQ's prior approval and the consideration of any request for an alternative use will be made on a case-by-case basis.


Director


Date