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94-A13 Native American Initiative
Short Course Management Plan

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1.0 INTRODUCTION

A training program is outlined for members of Native American Tribes whose lands have oil and gas resources. The proposed program will contribute to meeting the goals of the U.S. Department of Energy's (DOE) *Domestic Oil and Gas Initiative* to help Native American tribes become more self-sufficient in developing and managing their resources through training in cost-effective, improved technologies for hydrocarbon production that will meet environmental regulations.

The training program outlined is for adult tribal representatives who are responsible for managing tribal mineral holdings or setting policy, or who work in the oil and gas industry. The course content is in response to a survey that was developed by BDM-Oklahoma and sent in the spring of 1995 to 26 tribes or tribal agencies identified through previous contact with DOE. Tribes were asked to indicate course content needs, levels, preferred time of year, and location. Six tribes responded with specific recommendations and needs. These tribes are the Creek, Pueblo, Cherokee, St. Regis Mohawk, Northern Arapaho, and Ute Mountain Ute. The results of the survey are in Table 1–1.

1.1 TRAINING SCHEDULE

The training will be conducted in Bartlesville by BDM-Oklahoma technical staff, which includes geologists, geophysicists, exploration and drilling specialists, and environmental policy experts. The proposed training schedule offers four courses per year and includes those courses identified by the tribes in the survey. The schedule initially proposed in April 1995 has been modified in order to offer training identified by the tribes in the most cost-effective manner. Participants will be able to take two courses each "session," thus minimizing travel costs. A schedule is included in Table 1–2.

2.0 DESCRIPTION OF TRAINING PROGRAM

Descriptions are provided for two of the proposed short courses: Stripper Well Operations and Economics, and Environmental Management.

Table 1–1 Survey of Native American Tribal Training Needs—Tabulated Results

Tribe	Course	Level	Number Participants	Preferred Time	Location
Cherokee Nation Tahlequah, Oklahoma	Environmental Compliance	elementary intermediate advanced	10–15	winter	will travel
All Indian Pueblo Council Albuquerque, New Mexico	Environmental Compliance	intermediate advanced		summer winter spring	will travel
	Air Pollution Technologies	intermediate	15–25	summer	on site or
	Air Quality Program Management	advanced		winter spring	travel
	Pollution Prevention				
	40 Hour OSHA Training				
	Emergency Response to Hazardous Spills				
	Underground Storage Tanks				
	Ground Water Studies				
	Surface Water				
St. Regis Mohawk Hogansburg, New York	Environmental Compliance	intermediate advanced		fall winter	will travel
	Environmental Sampling Spill Mitigation	advanced			on site
Ute Mountain Ute Towaoc, Colorado	Oil and Gas Environmental Training—Oil Spills, Chemical Spills, Water Disposal Wells, and Inspection Wells	elementary intermediate		summer fall spring	will travel
Muskogee (Creek) Nation Muskogee, Oklahoma	Environmental Compliance	intermediate		fall spring	will travel
	Basic Production Training and Stripper Field Operation	elementary			will travel
Northern Arapaho Fort Washakie, Wyoming	Environmental Compliance	intermediate	2–4	spring	will travel
	Drilling and Completion	intermediate	2–4	spring	will travel

Table 1–2 Proposed 1996–1997 Schedule Short Courses for Native American Tribal Members

Date	Course
April 1996	Environmental Management
	Stripper Well Operations and Economics
May 1996	Air Pollution Technology
	Air Quality Management
	Groundwater and Surface Water
September 1996	Environmental Management
	Stripper Well Operations and Economics
November 1996	Air Pollution Technology
	Air Quality Management
	Ground Water and Surface Water

2.1 STRIPPER WELL OPERATIONS AND ECONOMICS (2 DAY SHORT COURSE)

2.1.1 Short Course Introduction

The principle objective of the oil and gas production business is to make money. Although, in today's economy, this has become very complex, encompassing many kinds of technology application and investment strategies, the history of an oil well follows a predictable cycle. An oil well starts with robust initial production (primary recovery), but the production declines over time, going through the stage of improved recovery (waterflooding, chemical recovery, or various other recovery techniques) until it reaches stripper well status. Eventually the accumulation of oil is depleted, and the well is then plugged and abandoned. This short course focuses on the final stage of oil production—stripper well operations and economics. It is meant to review and explain oil production and economics for people with differing backgrounds and with objectives from operating to investing.

2.1.2 Locating Petroleum Deposits

A brief review of the occurrence of petroleum deposits and techniques for locating them will be presented. The main emphasis of this section will be on reservoir types and the influence they have on production techniques. Along with this technological presentation will be a review of the cost of locating additional prospects.

2.1.3 Ownership of the Minerals

A cursory review of the rights to the mineral resource will attempt to explain the revenues from oil production that are a part of stripper well operations. Also, the various interests and financial aspects created by a lease will be covered.

2.1.4 Accessing the Mineral Deposits

A brief review of locating and drilling additional wells will be presented to identify the technology and economics used to access potential petroleum reservoirs. Detecting the presence of economic amounts of oil requires decisions that are based on technological considerations. These decisions, which can have considerable economic consequences, are frequently made on the basis of:

- Visual examination of rock cuttings
- Ultra-violet inspection of oil shows
- Chemical analysis of gas dissolved in the mud system
- Porosity inferred from rate of drilling
- Analysis of wireline log data.

How these decisions are made and the economic consequences of them will be presented.

2.1.5 Oil Production

Requirements to operate an oil lease will be reviewed along with the various legal and financial responsibilities. Also, production technologies leading to the final stage of an oil well's productive life will be reviewed. This cursory review of completion and production technologies includes hardware, installation, operation, and costs.

2.1.6 Selling Oil

Although producing oil from an oil well is very complicated, selling the oil is relatively simple. Techniques for selling the oil will be reviewed. Space oil storage, lease security, and oil prices also will be discussed.

2.1.7 Taxes and Tax Benefits

Oil and gas ventures involve three main types of tax-deductible expenditures: currently deductible expenses (i.e., expenses that are deductible when incurred), amortizable capital expenditures (i.e., expenses that can be deducted in installments over a number of years), and non-amortizable capital expenditures (i.e., expenses that are deductible only when the enterprise is terminated). An introduction to each of these will be given.

2.1.8 Oil Deal and Their Structures

Oil deals are commonly structured in accordance with the pool of capital concept, expressed in IRS General Counsel Memorandum 22730. Definitions for the various deals are also in accordance with the terms of the memorandum and often are confusing to the layman. There is no limit to the creativity that can be applied to any deal, but excessive creativity can lead to deals too complex to be readily understood. This section of the course will review some of the more common terminology and structures of oil programs for active participants and investors.

2.2 ENVIRONMENTAL MANAGEMENT (2-1/2 DAY SHORT COURSE)

2.2.1 Short Course Introduction

The environmental management short course will have one day of classroom training covering environmental regulations impacting hydrocarbon exploration, drilling, and production operations, a half day in a hydrocarbon-producing field training on survey techniques and observation, and a half day in a hydrocarbon-producing field conducting surveys in groups. On the third day of the short course, a half day will be in the classroom discussing the findings of day two in the field. This short course is designed to introduce participants to federal environmental laws that impact the oil and gas industry and to introduce them to some survey techniques in evaluating compliance with these laws by operators in producing and abandoned fields.

2.2.2 Environmental Regulations

Environmental regulations impacting hydrocarbon exploration, drilling, and production activities will be discussed in a one-day classroom session. *Federal Environmental Regulations Impacting Hydrocarbon Exploration, Drilling, and Production Operations* by William I. Johnson and Herbert B. Carroll (Topical Report NIPER/BDM 0130) will be used as the textbook. Eleven environmental regulations will be discussed along with their impact on operators producing hydrocarbons. The content of the regulations for the short course are briefly discussed in the following sections.

2.2.2.1 Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA) was enacted by Congress in 1976. The objectives of this act are to promote the protection of human health and protect the environment by conserving material and energy resources. It requires the Environmental Protection Administration (EPA) to regulate the management of solid waste, hazardous waste, and waste disposal. According to regulations, solid waste may be either solid, semisolid, liquid, or partially gaseous.

During the classroom training session, participants will learn how RCRA applies to the hydrocarbon industry. Examples of exempt and nonexempt wastes from exploration, drilling, and production operations will be presented, along with some disposal options that operators can consider when planning projects. The complicated pathway of compliance monitoring and civil enforcement will be presented for discussion and questioning.

2.2.2.2 Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA) was enacted by Congress in 1974. Under the SDWA the EPA promulgated regulations for oil field underground injection wells in the underground injection control (UIC) program. The UIC program established Class II injection wells for disposing fluids related to hydrocarbon production.

Participants will learn what fluids generated in hydrocarbon production operations may be injected into Class II wells. EPA violation codes and injection well testing will be discussed. Potential changes in Class II injection well construction, monitoring, and testing will be covered. Waste disposal options under the SDWA will be discussed, and questions will be answered as they are applicable to the UIC program in both Primacy States and Direct Implementation States.

2.2.2.3 Clean Water Act (CWA)

The Clean Water Act (CWA) was enacted by Congress in 1972 primarily for the control of point-source discharges of waste into waters of the United States. All point-source discharges of waste are required by law to have National Pollutant Elimination Discharge System (NPDES) or state equivalent permits. Discharges of produced water, drilling mud, cooling water, spent acid water, glycol, amine, caustic wash, etc. are examples of point-source discharges. Permits for point-source discharges require monitoring and reporting discharges of effluent conditions. Generally, the NPDES permit specifies the technology-based limits for concentration of the discharge, which is based on water quality.

In the classroom session, participants will learn about spill control and countermeasures plans (SPCC) required under the CWA. EPA-approved containment construction in hydrocarbon

production operations will be discussed. Some of the pitfalls in construction of containment structures will be pointed out and discussed along with some of the action taken by the EPA in an Oklahoma oil-producing region.

2.2.2.4 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was passed by Congress in December 1980. Releases of hazardous materials above a reportable quantity must by reported to the Coast Guard Response Center. CERCLA gives the EPA broad enforcement authority under Section 106 to require potentially responsible parties (PRPs) to clean up sites contaminated with hazardous materials or, under Section 107, to recover costs from PRPs incurred in remediating contaminated sites. CERCLA requires that releases of all extremely hazardous substances be reported (without regard to boundaries) to the National Response Center in Washington, D.C.

The potential impact on hydrocarbon exploration, drilling, and production operations will be covered. A recent federal court ruling, alternatives to disposal of hazardous waste, and the format for reporting releases of hazardous substances will be discussed.

2.2.2.5 Superfund Amendments and Reauthorization Act (SARA)

Superfund Amendments and Reauthorization Act (SARA) was enacted by Congress in October 1986. It is both a free-standing law and an extension of CERCLA. Subtitle III, better known as the Community Right-to-Know Law, is the portion of primary concern to operators in hydrocarbon exploration, drilling, and production. The EPA administers and performs oversight of SARA.

Participants will learn the impact of SARA on hydrocarbon exploration, drilling, and production operations. SARA compliance, a SARA definition for crude oil, and the SARA definition of the different categories of hazardous waste will be discussed.

2.2.2.6 Clean Air Act (CAA)

The Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990. The 1990 amendment to the CAA gives the federal government and states new authority to require operators to install pollution control equipment to reduce emissions, to obtain emission permits, and to perform air monitoring to further reduce emissions. Seven titles or sections were created when Congress amended the CAA in 1990.

Participants will learn about the additional sections of the CAA created in the 1990 as amended by Congress. They will learn the impact of the CAA on hydrocarbon exploration, drilling, and production operation, and of the fines that may be imposed under the CAA.

2.2.2.7 Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act (TSCA) was enacted in 1976. It regulates the manufacture, distribution, use, and disposal of certain targeted substances, including PCBs and asbestos. Any spill greater than 10 pounds of PCBs in a 24-hour period must be reported. Manufacturing facilities, utilities, and other users of PCBs and PCB-containing equipment, such as transformers and capacitors, must conform to requirements.

Participants will learn the definition of chemical substances under the TSCA and substances excluded from the TSCA's chemical substance definition. They will also learn about compliance with the TSCA in hydrocarbon exploration and production operation.

2.2.2.8 Oil Pollution Act of 1990 (OPA)

The Oil Pollution Act of 1990 (OPA) was enacted in response to several large oil spills into navigable waters of the United States. Its intent is to reduce the number of oil spills and to improve the nation's preparedness and ability to respond to spills. A comprehensive prevention, response, and compensation program for oil spills into onshore and offshore navigable waters was created by this act. The EPA has jurisdiction over certain onshore facilities under the OPA.

Participants will learn the impact of compliance with the OPA on hydrocarbon exploration and production operations. Fines, exceptions to owners/operators liability, liability limits, reporting, and exclusions of liability limits will be discussed.

2.2.2.9 Migratory Bird Treaty Act

The Migratory Bird Treaty Act prohibits harm to a migratory bird. A list of migratory birds protected by the treaty is found in 50 CFR Part 10. Operators can be fined by the U.S. Fish and Wildlife Service when migratory birds are trapped or injured in open oil pits and open-topped tanks. The treaty does not mandate any specific method of protecting or deterring birds from oil production or storage facilities. The Fish and Wildlife Service recommends that operators screen or net facilities that may endanger migratory birds. Fines for violations and protection methods will be discussed.

2.2.2.10 Endangered Species Act

The Endangered Species Act, enacted in 1973, prohibits the taking of an endangered or threatened species. Taking, as defined by the act, may include habitat modification or destruction that kills or injures protected wildlife by significantly impairing essential behavior patterns such as breeding, feeding, or sheltering. Clearing or developing an area that is or has the potential of being the habitat of an endangered or threatened species could be considered a violation of the Endangered Species Act. Compliance with the act and penalties for violations will be discussed.

2.2.2.11 Hazardous Materials Transportation Act (HMTA)

The Hazardous Materials Transportation Act (HMTA) authorizes U.S. Department of Transportation (DOT) regulations affecting hydrocarbon exploration, drilling, and production operations. The HMTA regulates transportation of hazardous waste, PCBs, asbestos, naturally occurring radioactive material (NORM), and other DOT hazardous materials. DOT requires permits for transporting these materials on public roads and highways, and requires the transportation be around rather than through cities. The impact of compliance with HMTA on hydrocarbon exploration and production operations will be discussed.

2.2.3 Economic Impacts of Implementing Environmental Regulations

A 1990 study performed by EPA and the American Petroleum Institute (API) estimated costs of implementing environmental regulations in hydrocarbon exploration, drilling, and production operations. It was estimated that it would cost from $15 billion to $79 billion initially for industry-wide compliance and approximately $2 billion to $7 billion per year thereafter to comply with increasing environmental regulations. Estimates of environmental compliance costs for operators and examples of activities that increase the cost of production operations and lower profits will be discussed.

2.2.4 Examples of Violations

Research is in progress to determine the typical number and type of surface violations affecting hydrocarbon exploration, drilling, and production operations. Osage County, Oklahoma, has been selected as the starting point for developing a statistical analysis program for the risk-based analysis research program performed by BDM Oklahoma for DOE at the National Institute for Petroleum and Energy Research (NIPER) facility. Osage County was selected because it begins approximately 1 mile west of the NIPER facility and all the minerals in it are owned by the Osage Indian Tribe through the Osage Mineral Reservation Estate administered by the Bureau of Indian Affairs (BIA) at the Osage Agency, Branch of Minerals, in Pawhuska, Oklahoma. Examples of common environmental violations will be discussed.

2.2.5 Field Training

Following a one day classroom session where environmental regulations impacting exploration, drilling, and production operations are discussed, all participants will receive field training in conducting an environmental survey on producing oil and gas leases. They will receive a checklist (see Figure 2–1) for conducting surveys of producing leases. The checklists will be used in both the morning and afternoon field training sessions. Participants will be capable of conducting a preliminary survey with other team members by the end of day two of the training.

2.2.5.1 Morning Session Field Training

In the morning session of day two of the environmental training short course, participants will receive instruction on conducting an environmental survey on a hydrocarbon-producing lease in Osage County, Oklahoma. They will receive instructions for recording events on the compliance check list (see figure 2–1) and they will learn to recognize some signs of accidental spills and other occurrences that could cause compliance problems.

2.2.5.2 Afternoon Session Field Training

In the afternoon session of day two, participants will be divided into groups. At each stop at a hydrocarbon-producing lease, all groups will apply survey techniques to identify potential compliance problems. Members of individual groups will compare findings before moving on to the next stop.

2.2.5.3 Field Training—Discussions of Findings

On the morning of day three, groups will meet for their final classroom session. Each group will present findings of the previous afternoon. They will discuss these and compare their findings and possible solutions to correcting any problems they found. This session will end at approximately noon or when all groups have presented and discussed their findings.

2.2.6 Conclusion

The environmental management short course for Native American Tribe members will provide training on the federal environmental regulations and laws impacting hydrocarbon exploration, drilling, and production operations. Participants will learn survey techniques and observe compliance in a producing oil field in the Bartlesville, Oklahoma area. After a half day of field training in survey techniques and observation of condition on producing leases, participants will be grouped to conduct independent survey and observation based on the classroom and field training received in this short course. On the morning of the third day, the participants will make presentations and compare their findings and observations in the field. They will also make recommendations to the group on their findings in the field. This training will provide a starting point for members of Native American Tribes to manage environmental conditions in hydrocarbon producing areas on tribal lands.

OPERATOR:	LEASE:
ADDRESS:	SURVEY DATE:
CITY:	NO. PRODUCING WELLS:
PHONE:	NO. DISPOSAL WELLS:
POINT OF CONTACT:	NO. WELLS P & A:
PHONE:	NO. WELLS ABANDONED NOT P & A:
	NO. WATERFLOOD INJECTION WELLS:

Surface Violations for Osage County, Oklahoma

(BDM Oklahoma Code number)

VIOLATION CODE	DESCRIPTION	NUMBER OF VIOLATIONS
001	Leak at well location, conditions are sloppy	
002	No descriptive signs: Wells Tank Battery	
003	No locking devices at tank	
004	Equalizer lines need lock stop valve	
005	Pipelines leaking	
006	Conditions sloppy at tank battery, clean up	
007	Pits not leveled or fenced	
008	Empty pits and level location	
009	Pit at tank battery not kept empty	
010	Fence at tank battery needs repairs	
011	Not confining vehicles to existing roads	
012	Remove all equipment not necessary to operate lease	
013	Lease not producing: subject to termination	
014	Lease roads in need of repair	
015	Tanks not numbered	
016	Saltwater tank leaking, repair or replace	
017	Gates or cattle guards not in proper condition	
018	Keep oil cans and other trash picked up	
019	Lease needs equipment moved off for termination	
020	Location needs leveling	
021	Wiring needs to be buried	
022	Oil on surface	
023	Saltwater damage on surface	
024	Other	
	Total Violations	

LEASE SURVEYED BY:

Signature

DATE OPERATOR CONTACTED FOR LEASE ACCESS:

DATE SURVEY RESULTS MAILED TO OPERATOR:

Figure 2–1 Oil and Gas Lease Survey Check List—Osage County, Oklahoma, Lease Information

3.0 PUBLICITY/ PARTICIPANT RECRUITMENT

A brochure will be developed and mailed to tribal contacts and tribal members who are on a mailing list compiled by BDM-Oklahoma. The brochure will include a description of the courses offered in the training program, a training schedule, and course registration materials. The training program also will be announced on the BPO Home Page. In addition, BDM-Oklahoma staff will work with the Bureau of Indian Affairs (BIA), the Council of Energy Resource Tribes (CERT), and the American Indian Science and Engineering Society (AISES) to make the information and registration materials available to interested tribal members.

4.0 EVALUATION

BDM-Oklahoma will develop a plan to evaluate the training courses. During the course, students will be required to conduct hands-on activities and/or assessments that will allow instructors to determine whether students have learned the appropriate skills. In addition, participants will be asked to complete an evaluation of the course that will provide feedback to instructors and coordinators. The evaluation form will include information on course content, instructional materials, field trips, quality of instruction, and course logistics. These data will be used to change the course as needed.

5.0 COSTS FOR SHORT COURSES

Costs of the training courses will be shared by the tribes, who will pay their travel and a modest per-participant course fee.

6.0 PLANNING PROJECT BUDGET

Staff Costs	$70,000
Materials Costs (including site)	10,000
Travel Costs	1,000
Total	$81,000