OCS Study
MMS 2008-050

Labor Needs Survey

Volume I: Technical Report

MMS U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

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ABSTRACT

The National Research Council, in a series of evaluations of the Minerals Management Service's (MMS) programs, has pointed out that while the MMS is responsible for the activities on the federal offshore it does not have a standard statistical series that differentiates between activities on the onshore, the state offshore, and the federal offshore. While the Census on Minerals does collect data on the near and the deep offshore this is not published due to confidentiality problems, particularly in the deep water.

This lack of data is a particular problem for the MMS as the agency is responsible for monitoring the impacts of offshore activities under the National Environmental Policy Act and the Outer Continental Shelf Lands Act.

The MMS has funded a project the goal of which is to develop a statistically sound and standardized survey methodology that could be repeated at five-year increments in the future. Barriers to gathering the data were to be identified, and as much data as possible, given the budget constraints, was to be gathered.

This report details the effort to create a methodology and to conduct a sample survey. The methodological approach is laid out so that subsequent surveyors can replicate the approach. The survey instruments that were developed with input from both the MMS and industry are also attached in an appendix. The report describes the 3 survey waves and discusses the problems encountered.

A major problem encountered in the survey waves was the low response rate. The response rates for voluntary surveys have been steadily declining over the past thirty years in both the United States and Europe. The response rate encountered in this survey was at a level that is now expected in voluntary surveys. While considerable data, particularly on employees, was gathered the low response rate called into question the unbiased nature of the data. Bias was also suspected due to the small sample that was selected.

In evaluating the survey the Survey Team concluded that the low response rate was exacerbated by the burden level of the survey. The Team recommended to the MMS a number of options including reducing the level of detail required, asking for regulatory authority, or negotiating with industry to obtain an agreement to participate in the survey

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I. INTRODUCTION

OBJECTIVES

Oil and gas industry activity on Federal offshore lands in the Gulf of Mexico (GOM) has undergone a number of boom periods since the end of World War II. However, during this entire period the economic and social impacts from this activity in the form of direct and indirect jobs have only been roughly estimated. As the National Research Council has pointed out in several evaluations of the Mineral Management Service's (MMS) programs there is no standard statistical series that differentiates between onshore, state offshore, and Federal outer continental shelf (OCS) oil and gas activities and provides reliable information. The current boom in activity on the OCS in the GOM has brought this question to the fore again. Both the Census Bureau and the MMS are looking into ways of clearly differentiating onshore and offshore data. This report summarizes an effort by the MMS to develop a robust and statistically sound method for evaluating the economic impact of specific OCS activities both on the local regions and on the national economy.

This report presents the results of an effort to develop a methodological approach for surveying the firms that are directly or indirectly engaged in the extraction of hydrocarbons from the federal offshore in the GOM, and then, to analyze any data obtained from the various waves of this survey. The survey was designed and executed for the MMS under a contract commissioned in 1998. The primary objective of this project was to develop a standardized and repeatable survey process, which the MMS could execute periodically to obtain the data it needs to support its research requirements. Part of this study was also to identify specific problems that might create barriers to gathering the data. A secondary objective was to gather as much valid data as possible in the course of developing the survey methodology.

SCOPE OF STUDY

The MMS seeks a reliable new source of data on the expenditures and employment of the oil and gas industry firms in the GOM, because it is required by the National Environmental Policy Act of 1969 (NEPA) and by the Outer Continental Shelf Lands Act, as amended, to assess, mitigate, and monitor the effects of the OCS program on the human environment. This survey was undertaken because no published data distinguish between onshore and offshore employment, and further between the state and federal offshore activities. Ideally, the survey would also provide separate statistics on developments in deep water. Once collected, the data will be used to describe the current environment in NEPA documents, monitor changes in the oil and gas industry for economic growth projections, form the basis for possible future research into industry effects, and support state and county or parish coastal-zone management planning.

The statistics computed from the survey data will be used in the MMS regional economic impact assessment models that produce estimates of the impact of GOM offshore oil and gas activities on the regional economies of nearby states and localities, and on the larger nation.

How Did the Scope of the Objective Evolve Over Time?

This project was a five-year project involving an Office of Management and Budget (OMB) approved survey that over the course of time, driven by both the MMS and industry interests, expanded beyond the original scope. The core of the survey remained centered around labor on the Federal OCS, but expanded to incorporate many other inputs. The sectors surveyed were

expanded to ultimately include seismic firms and industry contractors. The level of detail in the survey instruments was also expanded. The ultimate aim in the methodology was to respond to the MMS and industry concerns over a narrow evaluation of an international industry that had leakages of both labor and capital into and out of the GOM region. The expansion of the level of detail brought its own problems, which will be discussed further on in the report.

METHODOLOGY AND APPROACH

The groups sampled included both the oil and gas industry, and industries and businesses providing goods and services to the oil and gas industry, along with employees of both groups. Any data obtained were used for two purposes. First, the data were used to describe and monitor industry activity, e.g., the types and amounts of goods and services produced, the location of that production. Secondly, the data were used to describe the labor force employed, e.g., types and location of labor employed, allocation of work between the onshore and the offshore, wage rates for different occupations.

Given the level of detail that was required by the MMS, the initial step in this project was to set up two advisory boards: a Joint Industry/Government Committee (JIGC) and a Quality Review Board (QRB). The JIGC was established to advise on the development of the survey instruments and to help with the administration of the survey. Two members of the Survey Team who had extensive industry experience and contacts were instrumental in contacting industry personnel and establishing the membership of the JIGC. The original intent of the JIGC was to "(1) foster communication among industry groups and MMS concerning the goals and progress of this project; (2) serve as a vehicle for industry groups to provide advice to, and express concerns about, this project; and (3) to facilitate the development of a procedure for the sampling of employees of oil companies and support companies."

In effect, the role of the JIGC, the membership of which is listed in Appendix B, was to provide a forum for advice from as diverse a group of industry experts as possible. Consequently, the JIGC included representatives not only of the operators, but also of the service industries, such as the helicopter pilots and the shuttle boat firms. Through the members of the JIGC the Survey Team was able to identify companies that were willing to meet with the Team and spend time analyzing the survey instruments in an effort to make them as congruent to industry standards as possible while still meeting the MMS requirements.

The QRB consisted of a statistician and two regional economists. The role of the QRB was to provide expert advice in the structuring of the survey instruments, clarify technical problems for the ICF Consulting Team, and to make other suggestions on the analytical approach.

The survey was conducted in a series of waves as a means of gathering information on the structure of the survey instruments and the relevance of the questions. The details of the development of the survey frame, the survey instruments, and the input from industry and the committees are laid out in the following chapters.

ORGANIZATION

The remainder of the report is organized as follows:

- Chapter II discusses the design of the survey;
- Chapter III discusses the design of the sample frame;
- Chapter IV discusses the design of the questionnaire and the execution of the sample;
- Chapter V contains the analysis of the data received;
- Chapter VI contains the conclusions and recommendations; and
- Chapter VII contains the bibliography.

The report concludes with three appendices: Appendix A lists the members of the JIGC, Appendix B contains the cover letters that were sent from the MMS and ICF to the survey participants, and Appendix C contains an annotated list of the sources of labor data publicly available in the United States. A separate volume contains the survey instruments.

II. SURVEY DESIGN

A critical parameter for the survey was the stratification of the industry and then the basic sampling unit within each of the strata. To some extent, given the diverse operations, the strata became self-evident after the initial analysis. Nevertheless, considerable time was spent with the MMS personnel discussing options and then clarifying these options with industry.

STRATIFICATION

The statistical design of the survey reflected the diverse nature of the economic activities that support the production of oil and natural gas from the offshore GOM. Survey strata were created for the different industries and activities. These include

- operator,
- seismic,
- transportation,
- pipeline,
- platform and rig construction, and
- lease bidder.

The first five strata in the list above are economic sectors. The sixth is an activity. Although it is not thought of as an industry, bid preparation does consume significant resources. Transportation was further subdivided as the project proceeded into air transportation (largely helicopters) and marine.

One of these strata, operators, was further stratified by water depth interval and activity type. The water depth intervals were 0-60 meters, 60-200 meters, 200-800 meters, and over 800 meters. The activity types were exploration, development, producing, and decommissioning. This further stratification was established in the hope that it would make forecasts based on the data more accurate. As the exploration and development of leases continues over time, the tendency is for the newer leases to be in deeper water and to be more expensive to develop.

For all strata except operators, the primary sampling unit (PSU) was the firm. Firms that had done business in the GOM during the target year were to be questioned about their total economic activity in the GOM for the entire year. For example, the plan was to ask a firm engaged in seismic surveying for an estimate of all its expenses in conducting such work during the target year.

Using different PSU definitions in this survey is not an incongruity, since there is a requirement for linking PSUs across strata. The key is to select a PSU in each stratum for which you can make a sound projection to the population. Thus, the operator on a field was the natural and logical PSU in that stratum. This was agreed upon by industry and the MMS after considerable discussion, especially at the JIGC meeting in December of 1998.

Among operators, the PSU was each operator's activities on a field during 2000. The design team believed that asking operators to provide data on the firm's activities on all its leases in the GOM would be quite burdensome. One of the objectives of any survey is to collect a small amount of accurate information rather than a large amount of inaccurate data. The team believed

that asking an operator to focus on its area of responsibility within a particular field would accomplish that.

Importantly, this PSU is not defined as an operator on a tract. There was, initially, considerable discussion with the MMS on the basic geographic unit; field or lease/tract. Most fields are contained within a single lease/tract (tract). Many operators manage areas that span more than one tract on larger fields. However, these operators manage their multi-tract operations with consolidated accounting systems. Other large fields have multiple tracts with different owners but one designated operator for the whole field. Ultimately, field was selected as the basic unit driven in part by accounting practices, and in part by the fact that those fields that had more than one tract had only one or two operators. Asking for the consolidated data is a relatively simple request for the companies whereas asking for data on an individual tract within a field would be a considerable burden or impossible to compute given their accounting practices.

CONTRACTORS

A characteristic of the modern industry is that contractors provide much of the labor used by operators on GOM leases. This complicated the survey design. The survey design accounts for contractors not by direct sampling, but by asking the sampled operators to identify the contractors they used on the survey field. These contractors were polled to obtain information on their expenses and the labor that they provided to that operator. This approach maintained the operator on a field as the PSU and also made the expense and labor data on each PSU more comprehensive. Essentially, for some fields where operator and contractors responded fully the Team obtained a full census.

OTHER STATISTICAL AND SAMPLING ISSUES

All samples were drawn using simple random sampling with the stratum or substratum. The sample sizes within the strata were not intended to be as large as would be eventually required to support the MMS studies that require these data. The goal of this project was to design and to test a survey that could be reused periodically. The sample sizes in these tests were simply as large as the project budget could provide. This approach is scientifically valid, but results in larger margins of error.

To avoid the burden of sampling the same PSU within a stratum in both the second and third waves, the samples for both waves were taken in a single draw. In all strata except operators, one-third of the sampled PSU's were randomly assigned to the second wave, and two-thirds were assigned to the last, or third, wave.

In the operator stratum, the selected respondents were assigned to the two waves so that all the PSU's of each firm were in a single wave. By doing this, each operating firm could be contacted one time with a complete list of all their selected fields. Firms that had a centralized accounting system were able to make a single query to provide the data requested.

III. DEVELOPING THE SAMPLING FRAME

As the previous chapter describes, six sector and activity strata were established. An additional stratum was added when the transportation sector was split into two separate sectors. Considerable effort went into establishing the universe from which the random samples would be drawn. This effort was immeasurably complicated by the fact that the oil and gas industry was, and is, in a state of flux, undergoing mergers and acquisitions, withdrawals from areas, and in some cases bankruptcies. This state of flux was also reflected within many of the companies. Between the time of identification of the correct recipient of the survey within a company and the company's receipt of the survey, personnel changeovers often occurred. In other words the sampling frame was, in many cases, a "moving target." Giving continuing mergers and downsizing this problem will likely remain endemic. Although the sample sizes would be small, as dictated by available resources, a large effort was made to create a comprehensive universe.

DATA SOURCES

While operators can be clearly identified through the MMS sources, many sectors of the support services are not easily identified. Creating the universe was immensely time consuming and difficult. In the case of marine transportation, there are numerous small companies and little data; conversely there is an overwhelming amount of data on pipeline companies that is extremely difficult to use.

The ICF Team used a combination of the MMS data, commercial sources, and suggestions from the JIGC to establish the sampling frame for this project. The initial source used to create the universe for operating, seismic, pipeline, transportation, and platform/rig construction companies, was *The Gulf Coast Oil and Gas Industry Directory* (PennWell, 2000). This directory served as an adequate baseline contact list for developing the sampling frame. However, the directory is not limited to companies that only perform work directly or indirectly offshore. In a limited number of cases, company descriptions helped discern whether offshore work was performed. The directory only provided minimal data on whether a company worked on the offshore for the following categories

- engineering and construction,
- drilling contractors and rig owners,
- buyer's guide – rigs,
- pipeline operators.

Once the baseline list of companies was established for the sampling frame, other sources were used to modify and refine the list. The major sources were

- the MMS database for pipeline companies;
- FERC Form 6 data for gas pipeline operators;
- The website www.rigzone.com industry directory to refine the details of the platform/rig construction company group;

- The *Gulf Coast Directory* was found to be very comprehensive and up-to-date. (This publication was used to fine tune the Third Wave and proved to be very useful.);
- Offshore Data Services, www.questoffshore.com;
- Offshore Oil Company Contact List, www.ocsbbs.com; and
- The Offshore Operators Committee.

These databases and web sites were thoroughly researched resulting in a list of companies. These lists were expanded with information from senior members of industry.

The sampling framework was then further refined through queries directed to members of the JIGC and through other industry contacts. After the sample framework was established, companies were contacted.

EDITING THE SOURCE DATA TO OBTAIN THE FINAL FRAME

Once the draft list of the sampling frame was completed using all of the above sources, phone calls were made to determine the proper contact person for the survey instruments. This process also helped determine whether or not some of the companies identified actually performed offshore work and helped confirm the companies' stratum. This allowed the identification of the companies that were no longer in business, those that had moved, and those that merged with or were acquired by other companies.

SAMPLE SIZES WITHIN STRATA

Table 3.1 shows the sizes of the strata and the sample size. As mentioned before, the sample size in some of the strata is quite small. This was dictated by two factors. First, the primary goal of the project was to develop a survey methodology and survey instruments that the MMS could use in the future. Second, the resources available for administering the survey dictated the sample size. It was understood from the beginning that the emphasis would be on the primary goal, and that the sample size used might not be large enough to reach accepted levels of confidence about the data. The sample size in Table 3.1 represents the second and the third wave of the survey.

Table 3.1.

Sample Size

Stratum	Strata Size	Sample Size
Operators /Field Combinations	6,853	180
Seismic	43	21
Pipelines	74	38
Transportation	19	19
Platform/Rig	4	4
Bidders	N/A	45
Total	6,993	329

PLAN FOR SAMPLING CONTRACTORS

Operating companies were asked to provide contact information for all contractors for each field surveyed. These contractors, in turn, were sent the labor requirement survey forms. Some of the contractor information provided by operating companies was covered in the original service strata (seismic, transportation, pipeline, platform/rig construction) so the contractors had to be carefully checked to avoid double-counting. The majority of operator companies were not willing to identify their contractors. However, the few companies that did provide information allowed the team to get some sense of the range of type of contractors used. For example, drilling contractors and other service companies that were not included in the original strata designation were identified. In essence, the operators that responded provided a census of their contractors for each specific field that they were surveyed on.

EMPLOYEE SAMPLING

The original core of the project was the employee survey, and this remained a major part of the work throughout the project. The original plan was for the Survey Team to approach employees directly. However, in general, firms were not comfortable with this approach. Consequently, a system had to be developed whereby the firms, following instructions from the Survey Team, selected the employees randomly and distributed the forms, while maintaining the privacy and independence of the employees. After considerable discussion, the following system was decided on.

After the random selection of the firms, in conjunction with the firm-level letters and survey forms that were sent out, a letter was sent to each firm describing the process for selecting the employees. Enclosed with the letter were

- 25 employee survey forms and
- 25 addressed, postage-paid return envelopes for each respondent to use to return his/her completed survey to ICF Consulting.

The letter also included detailed instructions for selecting a random sample of the employees. Each firm's instructions were as follows:

This approach was recommended by industry and, in general, appears to have worked well. In some cases, it appears to have increased the response rate from the employees due to managerial encouragement. However, this methodology does not allow direct contact with the employees unless they contacted us or provided their contact information, and it does increase the burden level of the firm.

IV. DESIGNING THE QUESTIONNAIRES AND EXECUTING THE SAMPLE

The first very rough drafts of the questionnaires were developed by the Survey Team and then discussed at the kick-off meeting of the JIGC on December 8, 1998. Following this meeting, it was decided by the Survey Team and the MMS to take the preliminary design of the survey instruments to companies willing to meet and discuss the surveys. Five companies expressed willingness to meet with survey staff. These meetings were held in May of 1999. Detailed discussions were held on industry accounting practices and terminology and whether or not the questionnaires matched these practices.

After the meetings with industry, substantial revisions were made to the forms. The survey staff attempted to maintain a balance between what the MMS required for its economic and social analysis and what was readily available from the industry, given their accounting systems. Once the survey instruments were completed, an extensive period of review began. The questionnaires were circulated to all members of the JIGC, the QRB, and interested members of the MMS. Other industry experts not on the JIGC were also canvassed.

Considerable time and effort was spent on designing the questionnaires. This really constituted the core of the effort. The questionnaires finally established would be, with some refinement, submitted to the MMS for possible use in future surveys.

GENERAL PREPARATIONS TO IMPROVE THE RESPONSE RATE

The Survey Team was well aware that over the past decade response rates to voluntary surveys have fallen steadily to about 20 percent, on average[1]. As much as possible, steps were taken to encourage the industry to respond. Among the steps taken were the following.

An introductory letter from the Regional GOM MMS Director was sent to all the companies selected stating the importance of the survey and encouraging companies to participate. In addition, letters and flyers were developed and handed out at the various relevant trade association meetings. The Survey Team also asked the members of the JIGC to encourage members of their respective organizations to participate.

A clear statement was made in all the letters sent out with the survey instruments guaranteeing privacy and aggregation rules[2]. These principles were applied at more than one level. Overall, the industry was guaranteed that only the Survey Team would see the original submissions; that data would be blinded; and that all data would be made public only in aggregate form. Employees were guaranteed that only the Survey Team would see their responses, and that, as with the industry data, all public data would be in aggregate form. The Survey Team was also willing to sign individual confidentiality agreements with companies and, in fact, signed an agreement with one company. The letters also stressed that the MMS itself wanted the data blinded.

The survey instruments were made available electronically on the ICF web site as well as in hard copy and a toll-free survey help-line was established. The majority of respondents used the hard copy, but the electronic files were downloaded and used in some cases. Every letter to the

[1] Some statisticians maintain that, as a rule of thumb, the response rate on a survey is equal to 1/number of pages in survey. This is based on survey experience over time and corroborated by communications with other survey statisticians confirming that there has been a trend towards higher levels of non-response in the United States and Europe over the last 30 years.

[2] Data would only be published if there was a minimum of 3 responses to each question.

companies and to the individual employees spelled out the details of the survey and gave the help-line phone number. Both employees and companies made use of the help-line.

Finally, extensive phone contact was made with the individual companies before the survey instruments were mailed out. These phone calls were used to identify the appropriate corporate official to whom the survey instruments would be sent, explain the survey, and urge participation. In general, the company surveys went to the Operations Manager and the employee surveys went to the Human Resources manager in large firms. In smaller firms, the main contract for both surveys was either the President or a Vice President.

SAMPLE WAVES

The Paperwork Reduction Act of 1995 (5 CFR 1320.9) establishes explicit rules for Government surveys, whether voluntary or required. Surveys must receive approval from the Office of Management and Budget (OMB) and be substantively justified. One of the major concerns of OMB is the level of burden that is imposed on industry by a survey. The accepted way of estimating burden is to conduct a small pre-test (up to 9 participants) asking the participants to monitor and report the time taken to respond to the survey. This procedure was followed. Table 4.1 shows the predicted burden rate drawn from the pretest. The burden rate for the operators is substantially higher than for the other sectors amounting to almost 3 days. Even for the major support service, the burden amounted to almost 2 days, not including generating the random sample for the employee survey. However, OMB did not query these numbers as the survey was voluntary.

Table 4.1.

Predicted Hour Burden for Collection of Information

Respondent	Predicted Hour Burden per Respondent	Predicted No. of Respondents	Total Hour Burden
Seismic	13.9	21	292.25
Platform/Rig Construction	16.9	63	1,065.75
Pipeline Operators	13.9	34	473
Air Transportation	13.9	6	31.5
Operators	21.2	126	2,667
Employees	0.75	6,250	4,687.5
Contractors	8.5	189	1,606.5
Bidders	5.5	34	189.75
Total			10,724.5

Pretest (first wave)

The first field exercise of the survey was a pretest in January of 2000. The survey instruments were distributed to nine operators who were asked to distribute employee surveys to 9 of their employees. A group of specific questions were added to the survey just for this first wave. Companies and employees were asked to report the time required to respond to the

survey, providing the Survey Team with required data on the burden rate. Companies and employees were also asked to identify any questions that they had trouble understanding or objected to (e.g., some of the employee financial questions were described as "too intrusive"). This first wave work was completed in April of 2000.

Based on the data and responses obtained from the first wave, the Survey Team made further modifications to the survey instruments and were also able to gather information for the OMB requirement for burden rates.

The OMB Information Collection Request (ICR) was submitted in June of 2000. The public was requested to submit written comments by January 16, 2001. Permission to proceed with the survey was received in early 2001.

Second Wave

The second wave was a full-scale execution of the sample. One-third of the full sample in each stratum was used. The one-third/two-thirds split was chosen so that more of the sample would benefit from what was learned in the second pass. The design team judged that one-third of the full sample was enough to reveal any intrinsic problems. The initial contacts with respondents were made in August of 2001. Eighty-five survey packages were delivered, containing 2,400 survey forms to return (not including the impending contractor surveys). Ultimately, 140 contractor surveys were mailed.

The initial time allowed for response was one month. Every company that received a survey form was contacted within one week of receipt of the form. The survey was discussed and any questions addressed. During the course of these telephone conversations, the Survey Team was informed that one month was too short a time period. Many of the respondents took up to 4 months to respond, and a few took even longer. If the team was unable to contact the relevant person in a company, follow-up telephone calls were initiated every week to the individual companies for 4 to 5 weeks. If initial contact was made, a follow-up call was scheduled usually within one to two weeks, and every few weeks thereafter. Consequently, the timeframe for the second wave lasted until March of 2002.

Third Wave

The remaining two-thirds of the full sample in each stratum were used for the third wave, which began in February of 2002. One hundred twenty survey packages were delivered containing 4,750 forms (not including the impending contractor surveys). As with the second wave, respondents took much longer to return the survey and the third wave ended in October 2002. However, only four contractor surveys were mailed as the Survey Team found that many of the operators in this wave were not willing to reveal their contractors names. Conversations with the operators indicated that they were unwilling to take on the burden of generating the information and, more importantly, they were unwilling to impose this burden on their contractors.

SPECIFIC PROCEDURES FOR CONTACTING RESPONDENTS

The following box summarizes again the procedures for implementing the survey and encouraging responses.

The pre-screening process involved

- locating the companies using various published industry contact databases and books,
- calling these companies to confirm their business, address, and point of contact (POC), and
- sending the chosen survey respondents an introductory letter from the MMS director.

Survey packages were mailed within one-week of sending the MMS introductory letter. These packages included

- a two-page cover letter addressed to the company POC that explained the survey process and its benefits to the industry, scheduled a phone meeting (date and time) with the survey proctor, and included a toll-free survey help-line phone number (to change the survey kickoff meeting or answer any preliminary questions);
- a hard-copy of the company survey (or surveys);
- 25 hard copies of the employee surveys (in the second and third waves);
- postage-paid return envelopes for all of the forms;
- a blank 3½-inch computer disk (for reporting electronically); and
- a reference to the survey website should the company prefer to use electronic forms.

Within one week of receiving the survey package, the companies' POCs were phoned according to the time and date listed in the cover letter of the survey package. If the POC could not be reached, a message was left asking for a return phone call on the toll-free survey help-line. Return phone calls were made every week for a month if the respondent did not return the message(s).

During the telephone kickoff meeting, the survey proctor reviewed the sections of the survey, and provided help in understanding the survey. Follow-up meetings were usually scheduled to obtain employee sampling information from those companies with more than 25 employees (please see the explanation of employee sampling procedures in Section III, Developing the Sampling Frame, for an explanation of this process).

The respondents had the choice of whether to download the electronic survey forms from the survey web site and send the completed forms on the provided diskette or to, simply, fill out the provided hard copy, or do a combination of both. Companies were encouraged to provide any expenditure or labor data (no matter how detailed) electronically, if it was the less burdensome route.

PROCESSING THE COMPLETED FORMS

The company data that were received were allocated a number, the name was removed and then the data was entered into an MS ACCESS database. As part of the process, the questions that were not answered were identified (e.g., no company answered the question on labor turnover rate) and the questions that appeared to pose problems for companies were also identified. An example of the latter was one of the expenditures parameters. Going forward, these are the questions that the MMS needs to redefine for future surveys, or to eliminate. The MMS had requested that all expenditures be identified by Standard Industry Classification (SIC) and North American Industry Classification System (NAICS) codes. This appeared to cause great confusion and this part of the form was either not completed or incorrectly completed. The Survey Team, through both analyzing the responses and making follow-up phone calls to the respondents, completed this section to the best of their ability.

A similar process of assigning numbers was followed for the employee data before it was entered into the database.

Table 4.2.

Timeline of the Project

Date	Accomplishment
Summer 1998	Contract Signed
December 1998	Joint Industry/Government Meeting
1999	Survey Form and Methodology Development
January-April 2000	Preliminary Survey Performed
June 2000	Office of Management and Budget Submittal
Spring 2001	Office of Management and Budget Approval
August 2001	Second Wave Survey Begins
February 2002	Third Wave Survey Begins
March 2002	Second Wave Survey Ends
October 2002	Third Wave Survey Ends

V. ANALYSIS AND RESULTS

This chapter presents the analysis and results obtained from the survey data. As is true in all surveys, much of the analysis focused on managing non-response. After the Survey Team had exhausted all attempts at follow up through direct contact, they still were then faced with a high non-response rate. The main technique for handling item non-response was to adjust the sample weights. The high non-response precluded more sophisticated statistical adjustments. Imputation was used in a few cases and is described below.

RESPONSE RATES

Despite all the efforts described in the previous sections, the response rate in every stratum was well below expectations. Table 5.1 provides a summary of the response counts and rates. All figures are the totals of the second and third waves. In Table 5.1 "Expense Responses Obtained" is the count of the companies that included expenditure data in their survey response. "Firms with Employee Responses" is the count of companies with at least one employee response. Therefore, "Employee Response Rate" is not the response of employee surveys sent versus those received; rather it is the percentage of companies with at least one employee response against the target number of company responses

Table 5.1.

Response Rates

Stratum	Target Responses	Expense Responses Obtained	Expense Response Rate	Firms with Employee Responses	Employee Response Rate
Operators	180	20	11.1%	18	10.0%
Seismic	21	5	23.8%	8	38.0%
Pipelines	38	2	5.3%	6	15.8%
Transportation	19	0	0.0%	1	5.3%
Platform/Rig	4	0	0.0%	2	50.0%
Bidders	45	12	26.7%	N/A	N/A
Total	329	39	11.9%	35	10.6%

All response rates are very low, which means that the statistics obtained from the available responses could be biased. The low counts in some strata present further problems. Having no expense responses from the transportation and platform/rig strata means that no population totals can be projected for those strata, and also that a grand total of expense across industries for the GOM cannot be computed. Having one set of employee responses in the transportation stratum and two sets from platform/rig just barely allowed the computation of grand totals for employee statistics, but no totals could be computed for those two strata alone.

While operators provided more responses than any other strata, 20 observations on expenses and 18 sets of employee responses cannot support the detail that was expected from the sub-stratification by water depth and activity level. If those observations had been evenly distributed, some differences by substrata could have been computed. However, that was not the case. As

Table 5.2 shows, the operator employees that responded are distributed so unevenly over the substrata that five cells have zero observations, and two columns and one row have one only observation. In addition, the number of operators shown in the table is only 17 because water depth category and activity type are not available for one operator.

Table 5.2.

Distribution of Operators Providing Employee Data

Depth in Meters	Activity Type				Total
	Exploration	Development	Production	Decommissioned	
0 to 60	3	0	5	1	9
60 to 200	2	1	2	0	5
200 to 800	0	0	1	NA	1
Over 800	1	0	1	NA	2
Total	6	1	9	1	17

Table 5.3.

Distribution of Operators Providing Expense Data

Depth in Meters	Activity Type				Total
	Exploration	Development	Production	Decommissioned	
0 to 60	3	4	4	1	12
60 to 200	1	0	2	0	3
200 to 800	0	0	1	NA	1
Over 800	3	0	1	NA	4
Total	7	4	8	1	20

Table 5.3 shows the response rates by operator substratum for company expense data. Again, five cells in the layout are empty, and one row and one column have only one observation. Over half of the observations are in the shallowest water depth. All of these features mean that the data are likely not to be representative, and that differences between substrata cannot be estimated with any reliability.

Even if these problems are ignored and weights are computed, another problem arises. Some of the cells with the most units in the population also have the lowest sample counts. For example, the most populous cell in 2000 was exploration at the deepest water depth, but that cell had only one set of employee responses and only three expense responses. This means that the weights vary wildly from 26 to over 3000, which is an undesirable feature of a weighting system. Too much of the population projections will depend on very few observations, and small changes in the assumptions used to compute the weights can make the estimated population totals vary widely. In this case, switching from stratified to unstratified weights makes the estimate of the total number of GOM employees vary from the low 20,000's to more than 60,000. As a point of

reference, the MMS estimated that 83,400 jobs were directly or indirectly related to Central and Western GOM activity in 1993.

Because of these considerations and results, no general, comparative statistics were computed on the substratification of operators by water depth or activity level and the weights used for the operator data were computed as if the stratification had not been used. Also, clearly, this small, poorly distributed sample cannot be used to compute reliable population totals. There is no fixed level of acceptable reliability; it depends on the application, the loss function, and the client's preferences, and is usually expressed in terms of the size of a confidence interval around point estimates. Here, the term "reliability" is used very generally because the survey did not have an established reliability level; the largest sample commensurate with available resources was taken. In future survey waves, the statistician would discuss the target level of reliability with the MMS and would establish the number of responses required to reach that goal. The data can be used, however, to estimate means and the distribution of categorical variables.

Deciding not to substratify within the operator stratum had a side benefit. The activity level and water depth for one operator's employee responses and those of two drilling contractors were not available, but these observations could be used if substratification was not required. This added 31 employee observations to the available pool of data, which is a significant increase (more than ten percent) in the total number of observations.

EMPLOYEE STATISTICS

In all strata except bidders, a subsample of company employees were asked to answer questions on where they lived, how they spent their income, marital status, and other personal characteristics. This section presents the statistics that were computed from the responses that were returned to the Survey Team. Even though the response rate was low, one can make reliable percentage-based estimates of many of the characteristics of the personnel who work in the industry.

The next two subsections, "Weights" and "Categorical Statistics", explain the derivation and the computation of the statistics. The subsection following those two presents the estimated distribution of the home zip code. This is followed by the subsection on the distribution of employee expenditures, which required a complicated estimation procedure that is explained in detail in that section. Next comes a set of other categorical statistics, such as the distribution of age and sex. The section concludes with a presentation of several two-way cross tabulations and statistical tests on whether some pairs of factors, such as income and commuting, are related.

Weights

Each employee observation is assigned a weight that is the inverse of the product of two estimated sampling fractions. One is the fraction of employees from the employee's company that responded. The other is the fraction of firms in the employee's stratum that provided employee responses. We believe that the latter are reliably estimated. We counted the firms in each stratum to develop the sampling frame and counting the number of firms with at least one employee response is straightforward. The fraction of employees in a firm that responded is less reliably estimated because we lacked good data on the total number of employees in a firm in many cases.

If the firm did not provide a count of the total number of employees, we used a relationship between the firm's total revenues and the number of employees that we had developed from regression analysis on the observations where both variables were available. The regression had

twelve observations that we collected from the survey data. The R-squared was 0.92. The estimated formula was 7.17 + 0.48*Revenue where revenue was annual in millions of dollars. The t-statistic on revenue was 7.63, so the effect was quite significant. This equation was used to fill in eight missing values for total company employees.

Categorical Statistics

All the survey responses can be classified as categorical or continuous. The categorical data are those that have a number of discrete response levels, such as sex or marital status. Some variables that are continuous, such as age, were made categorical in the survey by creating intervals for the responses. Most of the items on the employee survey form were categorical.

Tabulating the categorical factors is simply a matter of

- Multiplying each response by its associated weight, and adding up those products within each category. This provides an estimate of the number of employees in the population in each category
- The sum of all population projections across all levels of the categorical variable equals the estimated total number of employees in the population
- Within each category the ratio of its population estimate to the total population estimate is the fraction of the population estimated to be in that category

For example, the weights of the 39 employees who said they were living in three-digit zip code 703 added up to 5852, which is an estimate of the total number of employees who live there. Adding up the estimates for all zip codes yielded 28,163, which is an estimate of the total number of employees. Taking the ratio of employees in three-digit zip code 703 to the total is 20.78 percent, our estimate of the fraction of employees who live in that area.

As explained above, the employee data provided by the respondents does not provide reliable estimates of those population totals. However, this problem affects the totals but not the estimated fractions within the categories. In other words, the data can still make reliable statements about the fractions of employees that live in each zip code or are in age category three, for example. Therefore, the presentations below on the categorical results focus on the estimated percents of employees that fall within each class of a categorical factor and provide estimates of the standard errors for those percents. The population totals that are provided are for illustration only. If the reader has a reliable estimate of the population total, that should be used to estimate the number of employees in the population within each class of a categorical factor.

Distribution of Home Zip Code

Because the distribution of where GOM workers live would be useful to the MMS, the employee survey forms included a field for home zip code. This was an item that almost all respondents completed; 281 observations were available from the five strata with employee data.

Even so, whatever the number of responses, some five-digit zip code areas will always have fewer than three responses. To preserve confidentiality, such areas were combined with other contiguous areas. In the coastal GOM, three-digit zip codes were the smallest area that the data could support. Less densely populated areas had to be grouped by two-digit zip codes.

Table 5.4.

Estimated Distribution of Home Zip Codes

Zip-Code or Other Area	Population Percent	Based Population Total	Standard Error	Exogenous Population Total	Standard Error
32 Northern Florida	1.94	547	231	1,619	687
36 Mobile, Montgomery, AL	3.33	939	301	2,781	893
39 Biloxi, Jackson, Southern MS	4.28	1,207	339	3,574	1,008
Arkansas & Tennessee	0.82	232	151	686	449
700 Metairie, Chalmette, LA	3.67	1,033	315	3,058	935
701 New Orleans, LA	0.66	186	136	550	403
703 Houma, Donaldsonville, LA	20.78	5,852	679	17,329	2,019
704 Hammond, Ponchatoula, Bogalusa, LA	4.62	1,302	352	3,855	1,045
705 Lafayette, New Iberia, Abbeville, LA	18.75	5,281	654	15,640	1,942
706 Lake Charles, LA	1.40	394	197	1,165	584
Other South LA	0.58	162	127	480	376
71 Shreveport, LA	4.01	1,129	329	3,345	976
75-76 Dallas & Fort Worth, TX	0.89	252	158	745	468
770 Houston, TX	9.81	2,764	498	8,184	1,480
773 Humble, Kingwood, Spring, TX	9.14	2,574	483	7,621	1,434
774 Katy, Park Row, Sugar Land, TX	1.20	339	183	1,004	543
775 Deer Park, Galveston, Pearland, TX	5.23	1,472	373	4,360	1,108
Other Coastal TX	0.69	193	138	573	411
78 Austin, Corpus Christi, San Antonio, TX	6.46	1,818	412	5,384	1,223
9 West Coast	0.79	223	149	662	441
Other Lower 48	0.94	266	162	786	481
Total	100.00	28,163		83,400	

Table 5.4 shows the resulting relative distribution in the "Population Percent" column. The largest fraction of the employee population, 20.78 percent, is estimated to live in the Houma-Donaldsonville, Louisiana area, which is three-digit zip code 703. The second largest fraction, 18.75 percent, is estimated to live in zip code 705, which includes Lafayette, New Iberia, and Abbeville, Louisiana. The fraction estimated to live in New Orleans proper is less than one percent. Two three-digit zip codes in the Houston area, 770 and 773, have nine to ten percent each of the employee population. Four other areas in Louisiana and three others in Texas have more than one percent. Less than one percent of the population is estimated to live close to the coast and outside of these areas in each state.

Only three zip code areas outside of Louisiana and Texas are estimated to have more than one percent of the population. The code with Biloxi, Jackson, and other southern Mississippi areas is estimated to have 4.28 percent. The Mobile and Montgomery, Alabama zip code area has 3.33 percent. Finally, northern Florida had 1.94 percent. The only other specific areas outside the GOM coastal region were Arkansas and Tennessee (combined) with 0.82 percent and the U.S. West Coast with 0.79 percent. All other lower-48 areas combined to total only 0.94 percent.

According to these data, only a small percentage of employees commuted to work from outside the GOM coastal areas in 2000. However, given the low response, our assumption is that the results are biased.

Table 5.4 also shows the estimated population counts and standard errors derived from the two population totals. The first is based on the total of 28,163 derived from the sample itself, which we believe is unreliable. The second is based on a total of 83,400, which is the MMS's 1993 estimate of jobs that were directly or indirectly related to Central and Western GOM activity.

The estimates in Table 5.4 and all the categorical employee statistics below can be adjusted to any other exogenous population total that the reader would prefer to use. Since the percent of the population in each area is provided, computing the population in each is straightforward. The formula for the estimated standard error is provided below, but for small changes in the total population (less than a factor of 1.5), simply multiplying the standard errors in the table by the ratio of the new to the old population estimate is sufficiently accurate. In all of the tables with statistics on categorical variables, the estimate of the standard error around the mean in the *i*th category is:

$$SE_i = \left(p_i q_i N[N-n]/[n-1]\right)^{1/2}$$

where p_i and q_i are the fractions of the population in and not in the ith category; N is the population total; and n is the sample size.

Employee Expenditures

The employees were asked to provide percentage-based personal expenditures related to the income they received from actual offshore work or onshore work related to the offshore. However, it is possible that there is confusion in some of the responses between personal and household expenditures. We attempted to clarify this in follow-up telephone calls, not always successfully.

Because the MMS needs data on how employees spend their income and because the employee expenditure data had problems, great attention was paid to computing this distribution.

The problems with the data were what one might expect when people try to recall their expenditures and turn them into percentages of income. Many people had different names for the same item, and some split expenditures into smaller categories than did others. We collected the data into 11 standard categories as follows

- auto insurance,
- auto payment,
- education,
- food and clothing,
- other insurance,
- miscellaneous,
- mortgage or rent,
- recreation and entertainment,
- saving and investment,
- taxes,
- utilities.

Predictably, our respondents usually recalled information on their large expenditures. Most people entered the percent spent on housing, food, and clothing. It appears that those who had large but temporary expenditures, such as on education, also entered those. In many cases, however, the miscellaneous class was a large percent or the respondent only recorded the large classes of expenditures.

To adjust for this bias, we used a constrained regression to estimate the mean percentage in each category. First, the data were prepared with a series of steps. A program examined each respondent's set of expenditure percentage entries and added records to account for missing income or missing categories as follows:

- If a respondent's total expenditure percent equaled 100 and a miscellaneous category was not entered, all categories not entered were assumed to have expenditure fractions of zero.
- If a respondent's total expenditure percent equaled 100 and a miscellaneous category was entered, all categories not entered were assumed to be part of the miscellaneous category. For example, if all categories except utilities were entered, then we assumed that the miscellaneous category included utilities.
- If a respondent's total expenditure percent was less than 100, the sum of expenditures on all missing categories was assumed to total to the missing percent. For example, if all categories except miscellaneous and utilities were entered and accounted for 92 percent, then the sum of expenditures on miscellaneous and utilities was assumed to equal eight percent.

The records representing these assumptions were added to the data and were used in a regression model that produced the estimates shown in Table 5.5. The categories with the largest fractions have magnitudes that seem reasonable. The estimated mean fraction of income spent on mortgage or rent is 21.5 percent. This is followed closely by 20.9 percent spent on food and clothing. The fraction for savings and investment of 13.5 percent may seem slightly high, but it could reflect the relatively high wages paid by the petroleum industry for offshore work.

Table 5.5.

Regression Estimates of Employee Expenditure Fractions

Consolidated Expense Category	Estimated Fraction of Income
Auto Insurance	4.2
Auto Payment	10.9
Education	2.5
Food and Clothing	20.9
Other Insurance	6.0
Miscellaneous	5.0
Mortgage/Rent	21.5
Recreation/Entertainment	11.8
Saving/Investment	13.6
Taxes	3.1
Utilities	0.5
Total	100.0

The 3.1 percent for taxes is clearly low as a fraction of gross income. This must mean that the respondents were thinking in terms of take-home pay. The MMS will need to consider this in the application of these estimates to its regional modeling. The very low fraction for utilities is probably a result of the small fraction of respondents that made an explicit entry for that category. Even with the help of the regression model, it was hard to attribute much of the 5.0 percent in the miscellaneous category to utilities.

The U.S. Bureau of Labor Statistics *Consumer Expenditure Survey* (CEX) program provides information on the buying habits of American consumers, including data on their expenditures, income, and consumer unit (families and single consumers) characteristics. Comparing these expenditure patterns with the 2000 CEX, we find that the Transportation category accounts for

19.5 percent of spending compared to the 15.1 percent in our study (auto insurance plus auto payment). Also of note are

- food (13.6 percent),
- apparel and services (4.9 percent),
- personal insurance and pensions (8.8 percent),
- other expenditures (10.5 percent),
- housing (32.4 percent), and
- entertainment (4.9 percent).

Other expenditures includes alcoholic beverages, personal care products and services, reading, education, and tobacco products and supplies, as well as cash contributions and miscellaneous expenditures.

The only category not captured in our list of consolidated expense categories that is included as a major expenditure in the CEX is Health Care (5.4 percent).

It is recommended when collecting these data in the future to limit the survey participant to these major CEX expenditure categories and include the definitions for each category. This would, in theory, eliminate the need for regression analysis and confine the respondents' answers to an already well established government expenditure survey from which conclusions about offshore employee expenditure patterns can be drawn.

While the processing of the statistics on employee home zip code and expenditure fractions was complicated, the remainder of the employee statistics was straightforward.

Employee Age Distribution

Table 5.6 shows the distribution of employee age by category. As the table shows, the age distribution is skewed toward older workers. The modal categories are ages 35 to 44 (37.0 percent) and 45 to 54 (35.0 percent). Both of these categories include more than twice the number of workers as the range from 25 to 34. The range from 55 to 64 has only eight percent of workers, but that is expected to be low since it includes ages at which many people retire. The age classification represents a picture that is increasingly found in major industries (i.e., the "graying" of the work force). In addition, the collapse of the industry in the eighties may have had long-term impacts on employment. Certainly, many of the workers laid off at that time moved into other occupations and did not return when the industry revived. Anecdotal information indicates that the industry is having trouble finding appropriately trained new personnel.

Table 5.6.

Age Classification

Age Range	Population Estimates		
	Percent	Total	Standard Error
18-24	4.8%	1,342	337
25-34	15.0%	4,220	564
35-44	37.0%	10,416	763
45-54	35.0%	9,868	754
55-64	8.0%	2,263	430
65+	0.2%	53	69
Total	100.0%	28,163	

Employee Sex Distribution

The distribution of employees by sex shown in Table 5.7 indicates that this work force is male dominated. The estimate that 94.6 percent of employees are male is well above the rate for other sectors of the economy. However, it may not be much above the rate for other risky occupations with similar manual labor demands.

Table 5.7.

Sex Classification

Sex	Population Estimates		
	Percent	Total	Standard Error
Female	5.4%	1,530	367
Male	94.6%	26,633	367
Total	100.0%	28,163	

Other Categorical Employee Statistics

Tables 5.8 through 5.19 show a variety of other employee statistics including work schedule, type of commute, and education level. Every table shows the estimated percentage distribution, category counts based on an assumed population total of 28,163, and estimated standard errors by category. The data show employees to be largely Caucasian, married, and with 58 percent having a college degree or some college education.

Table 5.8.

Education Completed

Education Level	Population Estimates		
	Percent	Total	Standard Error
Graduate School	4.9%	1,367	341
College Graduate	25.3%	7,139	690
Some College	32.9%	9,276	745
High School or Less	30.4%	8,576	730
Trade School	6.4%	1,807	388
Total	100.0%	28,163	

Table 5.9.

Marital Status

Marital Status	Population Estimates		
	Percent	Total	Standard Error
Divorced	5.6%	1,573	364
Married	81.9%	23,054	610
Separated	2.6%	721	250
Single	8.8%	2,474	448
Widowed	1.2%	341	173
Total	100.0%	28,163	

Table 5.10.

Minority Status

Member of Minority?	Population Estimates		
	Percent	Total	Standard Error
No	92.2%	25,953	430
Yes	7.8%	2,210	430
Total	100.0%	28,163	

Table 5.11.

Race Classification

Race	Population Estimates		
	Percent	Total	Standard Error
American Indian or Alaska Native	5.6%	1,575	372
Asian	0.4%	119	102
Black or African American	4.4%	1,230	324
Caucasian	89.5%	25,210	485
Native Hawaiian or Other Pacific Islander	0.1%	30	51
Total	100.0%	28,163	

Table 5.12 and Table 5.13 show employee personal and household income. The differences between the two questions on the survey are as follows:

> Which of the following categories contains your **personal income** before taxes for **work related to the U.S. Gulf of Mexico offshore** in 2000? Please do NOT include the income from any other sources of income, such as your second job.
>
> Which of the following categories contains your **total household income** before taxes for 2000? Please include income from any other jobs you may have, or that your spouse or partner contributes to the household.

Respondents appear to have followed these directions. Employees are well paid, with 74 percent falling into the ranges above $50,000 per annum. Approximately 40 percent fall into the ranges of $70,000 per annum and above. Household income is also high, with 77 percent above $50,000 per annum, and 62 percent above $70,000 per annum.

The U.S. Bureau of Labor Statistics Quarterly *Census of Employment and Wages* (QCEW) program publishes employment and wages reported by employers covering up to 98 percent of U.S. jobs. Year 2000 state averages for total covered employment under the program in Louisiana and Texas are $27,888 and $34,943, respectively. Employees in the Louisiana and Texas mining sector average $53,299 and $78,302, respectively.

Table 5.12.

Personal Income

Personal Income	Population Estimates		
	Percent	Total	Standard Error
Under $20,000	4.2%	1,187	328
$20,000 to $29,999	5.1%	1,440	359
$30,000 to $39,999	7.2%	2,036	422
$40,000 to $49,999	13.5%	3,789	557
$50,000 to $69,999	34.4%	9,693	775
$70,000 to $89,999	28.2%	7,946	734
$90,000 to $109,999	5.1%	1,435	359
$110,000 to $149,999	2.4%	669	248
$150,000 or more	4.1%	1,155	324
Total	100.0%	28,163	

Table 5.13.

Household Income

Household Income	Population Estimates		
	Percent	Total	Standard Error
Under $20,000	2.4%	680	250
$20,000 to $29,999	3.3%	937	293
$30,000 to $39,999	3.5%	988	300
$40,000 to $49,999	6.5%	1,820	401
$50,000 to $69,999	24.7%	6,952	703
$70,000 to $89,999	30.0%	8,456	748
$90,000 to $109,999	16.0%	4,515	598
$110,000 to $149,999	9.6%	2,713	481
$150,000 or more	6.3%	1,782	397
Total	100.0%	28,163	

As Tables 5.14 and 5.15 show only a small percentage of the employees hold a second job, and of these only 4 percent have a second job that involves offshore work.

Table 5.14.

Employees with a Second Job

Second Job?	Population Estimates		
	Percent	Total	Standard Error
No	92.2%	25,975	485
Yes	7.8%	2,188	485
Total	100.0%	28,163	

Table 5.15.

If the Employee had a Second Job, was it Offshore

Second Job Offshore	Population Estimates		
	Percent	Total	Standard Error
No	96.2%	27,084	788
Yes	3.8%	1,079	788
Total	100.0%	28,163	

The relative high incomes are also reflected in Table 5.16, which shows that the majority of spouses work either full or part time.

Table 5.16.

Spouse's Occupation

Spouse Occupation	Population Estimates		
	Percent	Total	Standard Error
Currently Unemployed	1.0%	293	183
Employed Full-time	44.3%	12,465	895
Employed Part-time	18.6%	5,241	702
Homemaker	36.1%	10,164	866
Total	100.0%	28,163	

Table 5.17 shows that the majority of employees receive some training during the course of a year. Twenty-eight percent receive training three or more times a year.

Table 5.17.

Number of Times Training in the Past Year

Training	Population Estimates		
	Percent	Total	Standard Error
Never	18.1%	5,091	611
Once	27.4%	7,716	708
Twice	27.1%	7,622	706
Three or Four Times	19.2%	5,399	625
More than Four Times	8.3%	2,335	438
Total	100.0%	28,163	

Table 5.18 shows the response to the question asking whether or not the employees commuted from home or stayed in local housing. About 18 percent (17.6) have local housing. However Table 5.18 should be examined in conjunction with Table 5.19, which shows work schedules for the employees.

Employees with the 14-and-14, 14-and-7, or 7-and-7 work schedules would be able to live anywhere in the larger region. These are estimated to be 38.1 percent of workers.

Table 5.18.

Local Housing or Commute from Home

Commute Method	Population Estimates		
	Percent	Total	Standard Error
Home	82.4%	23,202	727
Local	17.6%	4,962	727
Total	100.0%	28,163	

Table 5.19.

Type of Work Schedule

Work Schedule	Population Estimates		
	Percent	Total	Standard Error
5 and 2	21.6%	6,071	716
14 and 14	12.7%	3,565	542
14 and 7	0.1%	39	60
9/80	3.0%	845	278
7 and 7	25.3%	7,132	709
Other	37.3%	10,513	789
Total	100.0%	28,163	0

Table 5.20 shows the estimated distribution of employees by type of work (i.e., whether their work is onshore or offshore) and whether they are assigned to offshore projects. As the table shows, 45.6 percent of workers are estimated to work offshore. Another 34.5 work onshore in support of offshore projects. There are also smaller fractions of employees who support offshore projects with less than 100 percent of their work time.

Table 5.20.

Type of Work Performed

Work Type	Population Estimates		
	Percent	Total	Standard Error
Primarily Offshore	45.6%	12,847	804
Primarily Onshore in Support of Offshore	34.5%	9,705	767
Primarily Onshore with < 50% Devoted to Offshore	6.8%	1,928	408
Primarily Onshore, Occasional Offshore Assignments	8.6%	2,413	452
Unrelated to Offshore Activities	4.5%	1,271	335
Total	100.0%	28,163	

Two-Way Cross Tabulations and Tests

This subsection presents cross tabulations and tests the following five pairs of categorical variables:

- income and commuting
- education and income
- age and income
- type of work and age
- commuting and age

The cross tabulations and tests were computed using the latest version of SAS and a procedure that takes account of the complex survey design and the stratification and clustering of employees within companies. In several of the cross tabulations some of the levels of factors had to be combined to avoid having empty cells, which would prevent the computation of the test statistic. This was always the case with the nine income levels and six age levels. The row and column labels in the tables indicate the groupings that were adopted.

Table 5.21 is a cross tabulation of household income and commuting status. Each cell in the cross tabulation includes three statistics—the weighted frequency, the row percent, and the column percent. Comparison of the row percents with increasing income give the impression that rising income might be associated with living close to work. However, the formal test statistic does not support this. The Rao-Scott Chi-Square is 4.30 on 5 degrees of freedom with a p-value of 0.51. Thus the data show no significant association of income level and commuting status.

Table 5.22 shows the weighted frequencies of income category versus educational achievement. Again, examination of the row percents from row to row seems to show a trend. At the lowest income level the modal educational level is 1 (high school), but at the highest income level the model education is 4 or 5 (college or more). The Rao-Scott Chi-Square is 48.93 on 12 degrees of freedom with a p-value of less than 0.0001; thus, the data do show a significant association of income with educational achievement.

Table 5.21.

Cross Tabulation of Household Income by Commuting Status

Income Category	Statistic	Commutes?		Total
		Yes	No	
1-4	Weighted Frequency	2,148.0	103.5	2,251.5
	Row Percent	95.4%	4.6%	
	Column Percent	13.4%	5.4%	
5	Weighted Frequency	3,629.0	212.8	3,841.8
	Row Percent	94.5%	5.5%	
	Column Percent	22.7%	11.1%	
6	Weighted Frequency	5,505.0	490.5	5,995.5
	Row Percent	91.8%	8.2%	
	Column Percent	34.4%	25.5%	
7	Weighted Frequency	2,603.0	664.5	3,267.5
	Row Percent	79.7%	20.3%	
	Column Percent	16.3%	34.5%	
8	Weighted Frequency	1,204.0	169.4	1,373.4
	Row Percent	87.7%	12.3%	
	Column Percent	7.5%	8.8%	
9	Weighted Frequency	920.6	283.3	1,203.9
	Row Percent	76.5%	23.5%	
	Column Percent	5.8%	14.7%	
Total	Weighted Frequency	16,009.6	1,924.0	17,933.6

Table 5.22.

Cross Tabulation of Household Income by Education

Income Category	Statistic	Education Category			Total
		1	2-3	4-5	
1-3	Weighted Frequency	1,992.0	683.9	561.7	3,237.6
	Row Percent	61.5%	21.1%	17.3%	
	Column Percent	28.0%	6.6%	6.8%	
4	Weighted Frequency	1,044.0	520.1	156.0	1,720.1
	Row Percent	60.7%	30.2%	9.1%	
	Column Percent	14.7%	5.0%	1.9%	
5	Weighted Frequency	2,363.0	2,573.0	1,125.0	6,061.0
	Row Percent	39.0%	42.5%	18.6%	
	Column Percent	33.2%	24.9%	13.7%	
6	Weighted Frequency	2,081.0	3,576.0	2,228.0	7,885.0
	Row Percent	26.4%	45.4%	28.3%	
	Column Percent	29.2%	34.6%	27.1%	
7	Weighted Frequency	409.5	1,745.0	1,992.0	4,146.5
	Row Percent	9.9%	42.1%	48.0%	
	Column Percent	5.8%	16.9%	24.2%	
8	Weighted Frequency	174.3	1,256.0	1,191.0	2,621.3
	Row Percent	6.7%	47.9%	45.4%	
	Column Percent	2.4%	12.2%	14.5%	
9	Weighted Frequency	99.9	498.7	1,132.0	1,730.6
	Row Percent	5.8%	28.8%	65.4%	
	Column Percent	1.4%	4.8%	13.8%	
Total	Weighted Frequency	7,119.8	10,332.6	8,229.7	25,682.1

Educational achievement is tabulated against age in Table 5.23. The positive association of age and income is apparent from an examination of either the row or column percents. The Rao-Scott Chi-Square is 25.37 on 12 degrees of freedom with a p-value of about 0.01. The data support the notion that income varies significantly with age.

Table 5.23.

Cross Tabulation of Household Income by Age

Income Category	Statistic	Age Category				Total
		1-2	3	4	5-6	
1-2	Weighted Frequency	893.5	202.4	57.0	39.7	1,192.5
	Row Percent	74.9%	17.0%	4.8%	3.3%	
	Column Percent	23.0%	2.3%	0.6%	1.8%	
3-4	Weighted Frequency	814.4	1,293.0	386.8	82.8	2,577.0
	Row Percent	31.6%	50.2%	15.0%	3.2%	
	Column Percent	21.0%	14.8%	4.3%	3.8%	
5	Weighted Frequency	1,080.0	2,624.0	2,023.0	334.8	6,061.8
	Row Percent	17.8%	43.3%	33.4%	5.5%	
	Column Percent	27.9%	30.0%	22.6%	15.3%	
6	Weighted Frequency	1,173.0	2,791.0	3,181.0	740.3	7,885.3
	Row Percent	14.9%	35.4%	40.3%	9.4%	
	Column Percent	30.2%	32.0%	35.6%	33.8%	
7-9	Weighted Frequency	731.3	3,117.0	3,677.0	1,074.0	8,599.3
	Row Percent	8.5%	36.2%	42.8%	12.5%	
	Column Percent	18.9%	35.7%	41.1%	49.1%	
Total	Weighted Frequency	3,877.7	8,734.4	8,938.0	2,188.8	23,738.9

The cross Tabulation in Table 5.24 shows the weighted frequencies of age by work type. To conduct the test of association a slight modification had to be made to the data to avoid having an empty cell. The frequency of work type 2 (primarily onshore with occasional offshore assignments) by the highest age category (55+) was arbitrarily set at 0.001 instead of zero. This adjustment makes only the slightest difference in the calculated test statistic, and it allows the statistic to be calculated. The Rao-Scott Chi-Square is 7.69 on 9 degrees of freedom with a p-value of 0.57. The data do not reject the hypothesis that age has no association with work type.

Table 5.24.

Cross Tabulation of Work Type by Age

Work Type	Statistic	Age Category				Total
		1-2	3	4	5-6	
1	Weighted Frequency	2,196.0	5,028.0	3,898.0	987.2	12,109.2
	Row Percent	18.1%	41.5%	32.2%	8.2%	
	Column Percent	49.4%	48.1%	42.8%	47.9%	
2	Weighted Frequency	76.5	1,150.0	974.9	0.001	2,201.4
	Row Percent	3.5%	52.2%	44.3%	0.0%	
	Column Percent	1.7%	11.0%	10.7%	0.0%	
3	Weighted Frequency	1,080.0	2,624.0	2,023.0	334.8	6,061.8
	Row Percent	17.8%	43.3%	33.4%	5.5%	
	Column Percent	24.3%	25.1%	22.2%	16.2%	
4	Weighted Frequency	1,173.0	2,791.0	3,181.0	740.3	7,885.3
	Row Percent	14.9%	35.4%	40.3%	9.4%	
	Column Percent	26.4%	26.7%	34.9%	35.9%	
Total	Weighted Frequency	4,449.0	10,443.0	9,102.0	2,062.3	26,056.3

Examination of the cross tabulation in Table 5.25 indicates a trend toward less commuting with increasing age. Among those in the youngest age category only 7.4 percent do not commute. That figure rises to 21.9 percent among those in the highest age group. However, the test routine finds a strong intracluster correlation. After adjusting for that, the Rao-Scott Chi-Square is 1.42 on 2 degrees of freedom with a p-value of 0.71 giving no support to a significant association.

Table 5.25.

Cross Tabulation of Commuting by Age

Age Category	Statistic	Commutes?		Total
		Yes	No	
1-3	Weighted Frequency	9,114.0	724.0	9,838.0
	Row Percent	92.6%	7.4%	
	Column Percent	56.9%	37.6%	
4	Weighted Frequency	5,751.0	878.6	6,629.6
	Row Percent	86.7%	13.3%	
	Column Percent	35.9%	45.7%	
5-6	Weighted Frequency	1,144.0	321.3	1,465.3
	Row Percent	78.1%	21.9%	
	Column Percent	7.1%	16.7%	
Total	Weighted Frequency	16,009.0	1,924.0	17,933.0

In summary, the statistical tests find that income is significantly associated with both age and educational level. However, no support is found for associations between commuting status and either age or income or between work type and age.

COMPANY STATISTICS

All Sectors

The number of company expense variables that were collected is quite extensive. This chapter presents and discusses the tabulations of some key variables. The only industry sectors that could be included in these analyses were operators and seismic companies since those were the only sectors with three or more company responses. The study team obtained no responses from the Transportation sector or the Platform/Rig sector. It received two responses from the Pipeline sector, but these are not discussed in this report since this would violate the rules of confidentiality established for this project. However, one can say that all of the expenditures reported by the two pipeline companies were made in the larger GOM region.

The MMS is particularly interested in where and how GOM firms spend their money. The firms that were surveyed were asked to classify their expenditures in 2000 by NAICS code and the region where the seller was located. While we had anticipated that the respondents would give the zip code for the expenditure region, in practice respondents gave cities, states, or whether the expenditure was inside or outside of the coastal GOM. It is possible, however, to attribute all the regions reported to zip codes, by using the observed distribution by zip codes to allocate to the state areas. Such a tabulation is not included in this report.

The response of the Seismic and Operator sector created a matrix that had too many rows and columns for convenient display in this report. Therefore, this report includes a table reallocating the data by state. Table 5.26 shows that distribution for operating companies, while Table 5.27 shows the distribution for seismic companies. As Table 5.26 shows, the data imply that about 65

percent of operating company expenses goes to Louisiana, a little over 34 percent goes to Texas, and a very small percent goes to Mississippi. The columns farther to the right show that 98.80 percent is spent within the GOM area, while only 1.2 percent is spent outside the region.

Table 5.26.

Estimated Distribution of Operating Company Expenditures by NAICS and Region

NAICS	Description	Louisiana	Mississippi	Texas	Within GOM	Outside GOM	Grand Total
213112	Support Activities for Oil and Gas Operations	56.06	0.13	19.53	75.72	0.21	75.93
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	3.93		0.30	4.23	0.19	4.42
4247	Petroleum and Petroleum Product Merchant Wholesalers	0.42		1.76	2.18	0.00	2.18
45431	Fuel Dealers	0.63			0.63		0.63
481	Air Transportation	0.74		0.14	0.88		0.88
483	Water Transportation	1.43			1.43	0.16	1.58
484	Truck Transportation	0.19			0.19		0.19
517	Telecommunications	0.07			0.07		0.07
524	Insurance Carriers and Related Activities	0.00		0.02	0.02	0.02	0.04
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	0.38		0.02	0.40		0.40
541360	Geophysical Surveying and Mapping Services			12.32	12.32		12.32
8113	Commercial and Industrial machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.60		0.01	0.60	0.26	0.86
	Royalty Payments	0.15			0.15	0.36	0.51
Grand Total		64.58	0.13	34.09	98.80	1.20	100.00

The row values in the table show why the two-way tabulation is important. The various types of expenditures have distinctly different regional patterns. For example, geophysical surveying and mapping services was the second largest expenditure category. Among the operator survey respondents, that service was purchased entirely from Texas. On the other hand, machinery and equipment, the third largest category, was purchased almost entirely from Louisiana.

These expenditures for the operators show what they paid to their contractors and to firms from which they directly purchased capital goods. It does not reflect where the goods and

services originated. For example, in NAICS category 4338, "Machinery, Equipment, and Supplies" only 0.19 percent is expended outside the GOM. However, the machinery that was purchased in the GOM may have been manufactured elsewhere in the country or overseas. To identify the origins of all purchased goods would be a very large, expensive undertaking.

Table 5.27 shows a somewhat different pattern for the Seismic companies who provide services to the operators. Here, 34.03 percent of expenditures were in Texas with a relatively small amount spent in Louisiana. Seismic companies had a much higher percentage of expenditures outside the GOM region, a little over 16 percent. Thus, the regional expenditure patterns for seismic companies differ among categories from those of the operators. Of the four largest categories, two had large expenditures outside of the GOM region.

Table 5.27.

Estimated Distribution of Seismic Company Expenditures by NAICS and Region

NAICS	Description	Louisiana	Texas	Within GOM	Outside GOM	Grand Total
213112	Support Activities for Oil and Gas Operations			13.13	0.85	13.97
2211	Electric Power Generation, Transmission and Distribution			0.60	0.80	1.41
4238	Machinery, Equipment, and Supplies Merchant Wholesalers			24.24	3.04	27.28
4247	Petroleum and Petroleum Product Merchant Wholesalers			3.88	0.34	4.22
481	Air Transportation				0.39	0.39
4812	NonScheduled Air Transportation			0.51		0.51
481	Air Transportation			0.51	0.39	0.91
488330	Navigational Services to Shipping		0.55	0.55	0.09	0.63
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	0.17	10.76	10.93	0.09	11.01
532411	Commercial Air, Rail, and Water Transportation Equipment Rental and Leasing	6.75	1.69	8.43	10.81	19.25
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	6.92	12.45	19.36	10.90	30.26
54136	Geophysical Surveying and Mapping Services		21.03	21.03		21.03
8113	Commercial and Industrial machinery and Equipment (except Automotive and Electronic) Repair and Maintenance			0.28		0.28
Grand Total		6.92	34.03	83.58	16.42	100.00

Statistics on Operators

A variety of survey questions were directed only to operators. This section presents the statistics that were computed from their responses. It is important to bear in mind that only 25 operators out of 180 returned these forms with at least some questions answered. This number of

responses is barely sufficient to be marginally reliable for the questions that were most frequently answered and, even for these, the potential for non-respondent bias is high. However, the sample is clearly not large enough to support estimates by water depth or activity level. The tables that follow include the number of responses in each case to alert the reader to the questions not answered by all 25 respondents.

As Table 5.28 shows, just over three-quarters (76 percent) of operators said they operated year round on the surveyed field.

Table 5.28.

Field in Operation for All of 2000

Operate Entire Year?	Count	Population Estimates		
		Percent	Total	Standard Error
Yes	19	76.0%	5,208	596
No	6	24.0%	1,645	596
Total	25	100.0%	6,853	

Twenty-three operators completed at least some of the questions on the "Future Plans" form. One of those questions asked for the companies' internal corporate long- and short-term financial plan price for both oil and natural gas. Table 5.29 shows the answers to this question. Keep in mind that this survey was performed from August 2001 to October 2002 when domestic crude oil first purchase prices ranged from $23.08/barrel (bbl) in August 2001, down to $15.54/bbl in December 2001, and finally up to $24.76/bbl in October of 2002. U.S. natural gas wellhead prices were at $3.34/ thousand cubic feet (mcf) in August 2001, rising to $3.44/mcf in December 2001 before dropping to $2.14/mcf in February of 2002. The price eventually recovered and finished at $3.35/mcf in October of 2002.

Table 5.29.

Petroleum Prices Expected by Operators

Fuel, Scenario	Average Price	Estimated Standard Error
Oil (short term)	$21.21/bbl	$3.06
Natural Gas (short term)	$2.55/mcf	$0.25
Oil (long term)	$21.42/bbl	$2.72
Natural Gas (long term)	$2.73/mcf	$0.46

The operators were asked what action they would take if the price of oil were to fall below $15/bbl. Sixteen completed this answer and their responses were distributed as shown in Table 5.30. Of those whose answer was to increase the number of wells or platforms, two said they would add a well; one said a single well would be added; and none said a platform would be added. Of the two who would decrease the number of wells or platforms, one would abandon

one well, the other six wells. One would decommission one platform, the other none. Of the seven who would decommission the field, three said the decommissioning would take place in two years; three said three to four years; and two said four to five years.

Table 5.30.

Low Oil Price Scenario

Action Taken in Response to Low Price	Count	Population Estimates		
		Percent	Total	SE
Increase the Number of Wells and/or Platforms	3	18.8%	1,285	545
Decrease the Number of Wells and/or Platforms	2	12.5%	857	462
Decommission the Field	7	43.8%	2,998	693
Something Else	4	25.0%	1,713	605
Total	16	100.0%	6,853	

In the next section of the form operators were asked the same questions, but they were to assume that petroleum prices continued at their recent historical levels. At the time of the survey, we offered $18 per barrel for oil and $2.50/mcf for natural gas as the benchmarks. Table 5.31 shows the distribution of plans in such a case. Of the seven that said they would add wells or platforms, three said they would add one well; two said they would add two wells; and one each said they would add five or six wells. One of the seven would add a platform. Of the three who would decommission, one would decommission in the next two to three years, and two would decommission in four to five years.

Table 5.31.

Historic Average Oil Price Scenario

Historic Average Scenario	Number of Companies Responding
Increase the Number of Wells and/or Platforms	7
Decrease the Number of wells and/or Platforms	0
Decommission the Field	3
Something Else	4

As Table 5.32 shows, 23 of the operators answered the question on whether they expected a technological innovation in the next two to five years to reduce production costs. Only three (thirteen percent) expected this to happen.

Table 5.32.

Anticipated Technological Innovation to Reduce Production Cost

Technological Innovation Expected?	Count	Population Estimates		
		Percent	Total	Standard Error
Yes	3	13.0%	894	470
No	20	87.0%	5959	470
Total	23	100.0%	6853	

Among operators who supplied data on wages and benefits, the mean value for offshore personnel was $79,186 per year with an estimated standard error of $14,070. The mean for onshore employees was much lower at $20,315 per year. The distribution for onshore had a much greater relative variance; the estimated standard error was $21,806.

The mean water depth given by these operators was 1092 feet.

Sixteen operators who submitted field-description forms that appear to have good data had four jackup and two platform drilling rigs among them. They had no drill ships, submersibles or semi-submersibles. Eighteen operators reported having 11 caisson production structures but no subsea production structures. These same operators reported having collectively eighteen fixed platforms, but not one per operator. One operator reported having nine; another had five. The only other such structure reported was one tension-leg platform.

Twenty-two operators who reported their production in 2000 produced an average of 1.76 million barrels of oil and 4.16 billion cubic feet of natural gas.

Table 5.33 shows the statistics on workers per operator by type of worker. These statistics are based on the reports of nineteen operators.

Table 5.33.

Workers per Operator

Type of Worker	Mean	SE
Drilling Employees	0.11	0.46
Drilling Contractors	6.26	13.84
Prod./Maint. Employees	0.58	1.22
Prod./Maint. Contractors	1.47	2.63
Construction Employees	0.00	0.00
Construction Contractors	3.05	13.31
Onshore Employees	2.79	3.88
Onshore Contractors	0.58	2.29
Total Company Employees	5.89	14.05
Total Company Contractors	5.26	13.64

Contractors Working for Operators

The operators selected in the various waves were asked to provide contractor information. The plan was to use this information to survey the contractors. The response rate from the contractors was even lower than the response rate from operators, and it was lower in two dimensions. First, we received usable responses from only four operators. Second, only a fraction of the contractors working for those four operators responded. Thus, estimates such as the number of contractor employees per operator cannot be obtained.

The only statistics that are worth computing from the 23 contractor observations are the average wages of contractor employees by job category. A table of those average wages is shown in Table 5.34.

Table 5.34.

Contractor Wages by Job Category

Job Category	Average Wage
Blender	$15.00
CAP	$22.00
Contracts Manager	$50.00
Crane Mechanic	$21.00
Electrician	$13.00
Machinist	$19.10
Measurement Technician	$15.00
Mechanic	$13.85
Production Operator	$15.64
Project Manager	$50.00
Reservoir Simulation	$115.00
Sales Engineer	$109.38
Secretary	$15.00
Senior Engineer	$35.00
Service Supervisor	$20.00
Survival and Navigation and Refurbishment	$16.00
Technician	$66.69
Truck Driver	$20.00
Welder	$14.50

Statistics on Bidders

A total of 45 bidders were polled that submitted lease bids in 1999 or 2000 drawn from a population of exactly 100. Of the 45 companies contacted, twelve provided expense data. The total of the bids submitted by those twelve in two years was $217 million.

Examination of the data revealed an anomaly. Nine of the twelve observations had ratios of expenses to bids that were about 20 percent. Two had ratios close to 100 percent. The highest ratio was 30 times the bid. Expert knowledge on this issue indicates that spending 30 times the bid amount to prepare a bid is not credible, so that observation was excluded as an outlier.

Working with the remaining eleven observations yielded an average expense ratio of 45.1 percent of total bids or an estimated population total of $418 million over the two years. The estimated standard error around this was $96 million.

The total expense estimate was not divided into further categories, such as seismic. The firm with the largest expenditure did not provide such detail, and the remaining observations were too highly variable for such a small sample to support.

VI. CONCLUSIONS

The primary goal of this project was to establish a methodology and create survey instruments that the MMS could use in the future. The secondary goal was to gather data in a small sample survey, given the constraints on resources available.

The primary goal was achieved. A robust methodology, critiqued by both industry and academia, was developed as were survey instruments and the delineation of the sample universe for the various industrial sectors. The level of detail in the survey was based, in large part, on the input requirements of the MMS economic impact models.

However, the Survey Team has also determined that certain requirements made by the MMS modelers should be rethought. This determination centers in large part on company expenditure data and the categorization of the data. Industry reacted negatively to the level of expenditure data requested. This reaction was based on burden level rather than any opposition to participating in the survey.

The MMS models allocate expenditures by SIC and now NAICS code. However, asking for the NAICS or SIC code for expenditures invariably created confusion among the recipients of the survey instruments. Either the classification was not used, or when it was, the Survey Team observed that the code was used incorrectly, necessitating follow-up phone calls and a reclassification of data by the Team.

The respondents appeared to be particularly sensitive about certain questions. No company, in any sector, answered the question of employee turnover rate. Operators were also asked to supply the Survey Team with a list of their contractors to whom a specific survey instrument was to be sent. In general, the operators were unwilling to reveal their contractor information in large part because of the level of burden.

The secondary goal was only met in part. Data was received and, based on this data a picture of the industry can be drawn. However, given the small sample size and the low response rate, the data are presumed biased. A picture has emerged of the industry but this picture is not reliable.

The operator data response did not allow the categorization of expenditure data by water depth or by type of activity. Since companies were asked for proprietary data, the research team was bound by the rules requiring an aggregation of at least 3 firms in every category in order to protect confidentiality. This meant that a breakdown of expenditures by NAICS category and by region could be provided for two of the industry sectors, importantly including the operators.

The employee data are more extensive, although again the survey size is small. The picture that emerges from the survey of the employees shows an industry where the employees are largely Caucasian males, married, mostly with a college education level, and relatively well paid. The majority of employees live in the GOM region with a small percentage commuting from other regions.

A number of conclusions can be drawn from this low response rate. The survey was voluntary, and, as is becoming increasingly common among voluntary surveys, both government and private, the response rate was very low. Generally speaking, the further an individual sector was from interacting on a regulatory basis with the MMS the lower the response rate.

The main complaint that the Survey Team received was that the survey instruments were too detailed: this despite the fact that numerous industry representatives saw the forms before being finalized. Tied to this complaint was another, namely that the burden rate was too high. This came particularly from the smaller companies, but even from some of the larger companies. A

further complication regarding burden for the larger operators was the selection of a field as the basic unit. Fields were randomly selected so that some operators who are major players in the GOM received requests for data on numerous fields, in some cases up to 10 fields. The reason for this was that initial discussions had led the Survey Team to believe that a request for firm data would be too burdensome. In fact, as it turned out, asking for firm data may have been a more optimal approach in turns of burden, but a less optimal approach from the point of analysis.

The Survey Team has concluded that one of the main reasons that operators were not willing to identify their contractors was an unwillingness to impose this burden on them.

On a practical note the survey instruments were mailed [in hard-copy form] to the selected recipients. The companies were given the option of downloading the survey instruments from a web site and responding electronically. In future, the Survey Team would recommend the MMS investigate the anecdotal perception that response rates appear to be higher when a survey is conducted using a secure, interactive web site, or by automated telephone in the case of the employee surveys.

RECOMMENDATIONS

Looking forward the Survey Team has come to some conclusions about the future approach that the MMS should take.

- The first option is to ask for less detail, to breakout individual questions, and to send different questions to different firms. This may cause some analytical problems but the feeling is that the response rate may be higher. If this is not possible another option is to prioritize the questions.
- The second option is to request the same level of detail as in the current survey but with regulatory authority. The Survey Team would like to point out that a number of Federal agencies, faced with the same dilemma and low response rate, are requesting regulatory authority for their surveys. There does not appear to be any other option if this level of detail is required. If there is not some form of requirement survey responses will be low whether conducted by mail, by phone, or in person.
- The third option, if the MMS chooses not to request a regulatory route, would be to conduct negotiations with the operators to identify trade-offs that could be given in exchange for the requirement to complete the survey every 5 years. This should be presented to the operators as the other sectors constitute support sectors for the operators. The MMS might even consider writing in the survey requirement in the terms of the lease: in other words, it becomes a cost of doing business.

We still suggest giving the respondents a list of major expenditure categories as an example (including those new categories found through the operator and seismic expenditure survey responses), but not to include anything about NAICS classification systems. We suggest, instead, encouraging the companies to use their own expenditure categories, but to include an explanation of any category that is not self evident. This leaves the classification to the recipient and also requires that any questions arising from the data be posed to the company as quickly as possible after receipt of the data. In fact, in the present survey, given the problems arising from

misallocation of expenditures to the NAICS sectors the Survey Team had to redo the classification.

In addition, given the nature of the data requested, the MMS should consider coordinating their survey with the 5-year Census of Manufacturers as this might reduce burden levels.

Finally, the whole question of burden and its relationship to the size of the firm needs to be investigated. Going forward, the MMS needs to investigate whether or not:

- for large companies, the field as a basic unit should be disregarded and data should be required on a firm-wide basis; and
- for small companies, a more limited survey should be developed.

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APPENDIX A. MEMBERSHIP OF THE JIGC

Title	Contact	Company
Dr.	Adam Rose	The Pennsylvania State University
Mr.	Alan Spackman	International Association of Drilling Contractors
Mr.	Allan Pulsipher	LSU Center for Energy Studies
Mr.	Ben Dillon	Independent Petroleum Association of America
Mr.	Bill Dodge	Chevron USA
Mr.	Billy Berryhill	M-I Drilling—PESA
Mr.	Bob Alario	Offshore Marine Service Association
Mr.	Bob Moran	National Oceans Industries Association
Mr.	David "Doc" Schweitzer	Petroleum Helicopters, Inc.—NOIA
Mr.	David Garlick	Texas Independent Producers and Royalty Owners
Dr.	David Lamie	Western Illinois University
Mr.	Dick Armstrong	Clean Gulf Associates
Mr.	Don Davis	The LA Applied And Educational Oil Spill Research and Dev. Program
Mr.	Grover Davis	Marine Transportation Services, Inc
Mr.	Harry Luton	Minerals Management Service
Mr.	Herb Thompson	Ocean Industry Inc.
Mr.	James Collins	ICF Resources Incorporated
Ms.	Jane M. Carlson	Minerals Management Service
Mr.	Joe Simms	US Oil & Gas Association AL/MS Division
Dr.	Karol Krotki	No Longer on JIGC/QRB
Mr.	Kim Coffman	Minerals Management Service
Mr.	Leslie Horst	Danos and Curole—NOIA
Mr.	Mike Lyons	Louisiana Mid-Continent Oil & Gas Association
Mr.	Ralph Hellmich	Alabama Oil & Gas Board—Mobile Office
Mr.	Rex Mars	Big Inch Marine Services—SGA
Mr.	Richard Van Laere	Shell Pipe Line
Mr.	Robert Hatter	Texas General Land Office, Department of Mineral Leasing
Mr.	Rodney Cluck	Minerals Management Service
Mr.	Ron Forsythe	Energy Division Economic and Community Development
Ms.	Sherry Stephens	Petroleum Equipment Suppliers Association
Ms.	Theresa Hope	Varco
Mr.	Tim Sampson	American Petroleum Institute
Mr.	Tom Randolph	Randolph Consulting
Ms.	Vicki Zatarain	Minerals Management Service
Mr.	Virgil Harris	Offshore Operators Committee

APPENDIX B. COVER LETTERS

Appendix B includes the MMS Introductory Letter that was sent to notify companies that they had been chosen in the survey sample and to encourage them to participate. This letter was sent a week prior to the survey mailing from the MMS office in New Orleans. Following the MMS Introductory Letter are the cover letter templates used to send surveys to each group. Included are the Single-Field Operator Template, Multiple-Field Operator Cover Letter Template, Industry Group Cover Letter Template, and the Bidder Cover Letter Template.

MMS INTRODUCTORY COVER LETTER TEMPLATE

In Reply Refer To: MS 5430
<Title> <FirstName> <LastName>, <JobTitle>
<Company>
<Address1>
<City>, <State> <PostalCode>
See Attached

As you may have heard from your industry association, Minerals Management Service (MMS) has undertaken to conduct a sample survey to identify both the number of workers currently employed in the Gulf of Mexico offshore industry and the value of expenditures for the offshore by specific industry sector. This study is the first survey designed to focus on labor and expenditures pertaining specifically to the offshore. The information collected through the survey will characterize the practices of offshore oil and gas companies and contractors and will be beneficial for the entire industry. We are hoping to achieve a number of objectives with this survey:

- to gather data that are of value to both Government and industry,
- to estimate the socio-economic impact of the offshore industry on the coastal regions, and
- to estimate the regional, and ultimately, national value of the industry to the United States.

The MMS's contractor, ICF Consulting, has developed a series of survey instruments that have been scrutinized by industry representatives and edited in accordance with their suggestions. The Office of Management and Budget approved the survey this summer and the pretest portion of the survey has been conducted over the past few months.

The survey was planned in two waves, a pretest and the sample survey. Conducting the survey in two waves has allowed us to further refine the survey instruments to better represent industry realities. The pretest has been conducted and we have refined some survey procedures and instrument language to help increase the ease of responding to the survey. Data already gathered in the pretest will be aggregated with the data to be gathered from the sample survey to give a larger and hopefully definitive picture of the offshore industry. Your company has been selected for the sample survey.

This sample survey is entirely voluntary. In addition, we would like to emphasize the confidentiality of the data. Only the MMS contractor will see the data submitted by companies and employees. All reports submitted to MMS and the public will be in aggregate form that will not allow identification of individual companies.

We realize that the information we are seeking will require time and effort on the part of your organization, and we would like to thank you in advance for making these resources available. You will be receiving the survey instruments from ICF Consulting shortly after receipt of this letter. In addition, personnel from ICF will be calling shortly thereafter to clarify any problems. Outside of this period, please call 1-866-MMS-SURV (1-866-667-7878) for any further clarification. Responses are requested by <ResponseDate>, and no later than <LateResponseDate>.

Again, we hope that you will participate in the MMS Labor Needs Study Sample Survey. We are hoping to achieve a high response level that will allow the development of a robust database that will provide valuable information both to industry and Government.

Sincerely,

Chris C. Oynes

Regional Director

bc: 503-02b, 30898 (MS 5431)

Field File 30898 (MS 5411)

OMB Control Number 1010-0145

ICF:sdh:07/31/2001:30898 Survey pretest.doc

SINGLE-FIELD OPERATOR COVER LETTER TEMPLATE

Date
<Title> <FirstName> <LastName>
<JobTitle>
<Company>
<Address1>
<City>, <State> <PostalCode>
Dear <Title> <LastName>:

You should have already received a letter from the Minerals Management Service (MMS) describing the Gulf of Mexico Labor Needs Survey, and we would like to take this opportunity to thank you for your participation in this endeavor. As you know, all participation is voluntary and the information collected will remain completely confidential. Your assistance in this important effort focusing on offshore labor and expenditures is greatly appreciated. We realize that the information we are seeking will require time and effort on the part of your organization and would like to thank you in advance for making those resources available.

There are two types of surveys we wish for you to complete, a company survey and a set of employee surveys. The company survey is designed to collect information on particular company activities and expenditures during 2000, and is included in this package. The employee surveys focus on individual workers and could be sent to you at a later date depending on whether employees were involved in particular activities (we will determine this through a phone conversation). Detailed instructions for each survey are included in this survey packet.

We are enclosing hard copies of the survey instruments. Should you wish to complete the survey electronically, the forms are available for download at http://www.icfconsulting.com/mms. If you choose to use the electronic forms please make sure you transfer all survey I.D. numbers located in the upper right hand corner of the hard copy survey documents. In the case of operators also transfer the MMS data from pages 1, 4, and 5. Once completed, please return the data on the provided diskette or print and mail a hard copy in the pre-addressed, postage paid envelope.

Please have the appropriate staff members review the enclosed survey instructions and forward any questions they may have to you so that we can address them in the follow up call scheduled for <Time> on <Date>. At that time, we will go over the company survey form and determine whether you qualify to fill out the employee surveys. We will make sure that we have clearly communicated the information that we need and discuss any issues that you may have about format and availability of data. We will attempt to answer all of your questions at that time, but realize that issues may surface during the compilation of the data. Questions that arise can be directed to our toll-free MMS survey help line at 1-866-MMS-SURV (1-866-667-7878). The follow up call will also allow us to finalize a schedule for submittal of the survey. If this date and time is not convenient please call the number shown above to reschedule the phone interview.

Once again, thank you for participating. We look forward to speaking with you on <Date>.

Sincerely,
Zeta Rosenberg
Vice President
ICF Consulting

MULTIPLE-FIELD OPERATOR COVER LETTER TEMPLATE

Date

<Title> <FirstName> <LastName>
<JobTitle>
<Company>
<Address1>
<City>, <State> <PostalCode>
Dear <Title> <LastName>:

You should have already received a letter from the Minerals Management Service (MMS) describing the Gulf of Mexico Labor Needs Survey, and we would like to take this opportunity to thank you for your participation in this endeavor. As you know, all participation is voluntary and the information collected will remain completely confidential. Your assistance in this important effort focusing on offshore labor and expenditures is greatly appreciated. We realize that the information we are seeking will require time and effort on the part of your organization and would like to thank you in advance for making those resources available.

There are two types of surveys we wish for you to complete, a set of company surveys and a set of employee surveys. The company surveys are designed to collect information on particular company activities and expenditures during 2000, and are included in this package. The employee surveys focus on individual workers and could be sent to you at a later date depending on whether employees were involved in particular activities (we will determine this through a phone conversation). Detailed instructions for each survey are included in this survey packet.

We are enclosing hard copies of the survey instruments. Should you wish to complete the survey electronically, the forms are available for download at http://www.icfconsulting.com/mms. If you choose to use the electronic forms please make sure you transfer all survey I.D. numbers located in the upper right hand corner of the hard copy survey documents. In the case of operators also transfer the MMS data from pages 1, 4, and 5 in each company survey. Once completed, please return the data on the provided diskette or print and mail a hard copy in the pre-addressed, postage paid envelope.

Please have the appropriate staff members review the enclosed survey instructions and forward any questions they may have to you so that we can address them in the follow up call scheduled for <Time> on <Date>. At that time, we will go over the company survey form and determine whether you qualify to fill out the employee surveys. We will make sure that we have clearly communicated the information that we need and discuss any issues that you may have about format and availability of data. We will attempt to answer all of your questions at that time, but realize that issues may surface during the compilation of the data. Questions that arise can be directed to our toll-free MMS survey help line at 1-866-MMS-SURV (1-866-667-7878). The follow up call will also allow us to finalize a schedule for submittal of the survey. If this date and time is not convenient please call the number shown above to reschedule the phone interview.

Once again, thank you for participating. We look forward to speaking with you on <Date>.

Sincerely,
Zeta Rosenberg
Vice President
ICF Consulting

INDUSTRY GROUP COVER LETTER TEMPLATE

Date
<Title> <FirstName> <LastName>
<JobTitle>
<Company>
<Address1>
<City>, <State> <PostalCode>
Dear <Title> <LastName>:

You should have already received a letter from the Minerals Management Service (MMS) describing the Gulf of Mexico Labor Needs Survey, and we would like to take this opportunity to thank you for your participation in this endeavor. As you know, all participation is voluntary and the information collected will remain completely confidential. Your assistance in this important effort focusing on offshore labor and expenditures is greatly appreciated. We realize that the information we are seeking will require time and effort on the part of your organization and would like to thank you in advance for making those resources available.

There are two types of surveys we wish for you to complete, a company survey and a set of employee surveys. The company survey is designed to collect information on particular company activities and expenditures during 2000. The employee surveys focus on individual workers within your company that perform offshore work or onshore work in support of offshore activities. Detailed instructions for each survey are included in this survey packet.

We are enclosing hard copies of the survey instruments. Should you wish to complete the survey electronically, the forms are available for download at http://www.icfconsulting.com/mms. If you choose to use the electronic forms please make sure you transfer all survey I.D. numbers located in the upper right hand corner of the hard copy survey documents. In the case of operators also transfer the MMS data from pages 1, 4, and 5. Once completed, please return the data on the provided diskette or print and mail a hard copy in the pre-addressed, postage paid envelope.

Please have the appropriate staff members review the enclosed survey instructions and forward any questions they may have to you so that we can address them in the follow up call scheduled for <Time> on <Date>. At that time, we will go over the company survey employee survey sampling procedure, if needed. We will make sure that we have clearly communicated the information that we need and discuss any issues that you may have about format and availability of data. We will attempt to answer all of your questions at that time, but realize that issues may surface during the compilation of the data. Questions that arise can be directed to our toll-free MMS survey help line at 1-866-MMS-SURV (1-866-667-7878). The follow up call will also allow us to finalize a schedule for submittal of the survey. If this date and time is not convenient please call the number shown above to reschedule the phone interview.

Once again, thank you for participating. We look forward to speaking with you on <Date>.

Sincerely,
Zeta Rosenberg
Vice President
ICF Consulting

BIDDER COVER LETTER TEMPLATE

Date
<Title> <FirstName> <LastName>
<JobTitle>
<Company>
<Address1>
<City>, <State> <PostalCode>
Dear <Title> <LastName>:

You should have already received a letter from the Minerals Management Service (MMS) describing the Gulf of Mexico Labor Needs Survey. As you know, participation in the survey is voluntary and the information collected will remain completely confidential. We would like to take this opportunity to thank you for your invaluable assistance in this survey. Your support in this important effort focusing on offshore labor and expenditures is greatly appreciated. We realize that the information we are seeking will require time and effort on the part of your organization and would like to thank you in advance for making those resources available.

Please have the appropriate staff members review the enclosed survey instructions and forward any questions they may have to you so that we can address them in the follow up call scheduled for <Time> on <Date>. At that time, we will go over each form and make sure that we have clearly communicated the information that we need and discuss any issues that you may have about format and availability of data. We will attempt to answer all of your questions at that time, but realize that issues may surface during the compilation of the data. Questions that arise can be directed the MMS Survey Help Line at 1-866-MMS-SURV (667-7878). The follow up call will also allow us to finalize a schedule for submittal of the survey. If this date and time is not convenient, please call the number shown above to reschedule the phone interview.

Once again, thank you for participating. We look forward to speaking with you on <Date>.

Sincerely,
Zeta Rosenberg
Vice President
ICF Consulting

APPENDIX C. LABOR DATA REVIEW

Part of this project was a literature survey of publicly available labor data, and whether or not these data include information on offshore employment. Table A-C beginning on page 65 lists the various labor sources that ICF Consulting identified. However, none of them separately identified offshore labor. The data sources listed are a mix of federal and state agencies.

FEDERAL ECONOMIC DATA SOURCES

The Office of Employment Projections develops information about the labor market for the Nation as a whole with projections for 10 years into the future: labor force trends by sex, race or Hispanic origin, and age; employment trends by industry and occupation; and the implications of these data for employment opportunities for specific groups in the labor force, such as youth, the disadvantaged, and college graduates. Assessments are also made of the effect on employment of specified changes in economic conditions and/or changes in Federal programs and policies. The information developed is used in career guidance, education planning and policy formulation. This information is published in the *Occupational Outlook Handbook*, *Occupational Outlook Quarterly*, the *Monthly Labor Review*, and other special reports.

OES (Occupational Employment Statistics)
LAUS (Local Area Unemployment Statistics)
ES 202 (Covered Employment & Wages)
Employment Projections*

The Texas Workforce Commission, Alabama Department of Industrial Relations—Research & Statistics Division, Mississippi Employment Security Commission, and Louisiana Department of Labor are the four State Employment Security Agencies (SESAs) which collect Employment Data from Industry in each of the four States.

SESAs collect employment information from industry in each 4-digit SIC code (6-digit NAICS code by 2001) by County. The U.S. Department of Labor and the Department of Commerce base their data off of these numbers.

Links to All State Labor Market Information Agencies:
http://www.hhh.umn.edu/Centers/SLP/edweb/
http://www.auber.org

The ES-202 program serves as a near census of monthly employment and quarterly wage information by 4-digit industry at the national, State, and county levels. The Covered Employment and Wages Program, commonly referred to as the ES-202 program, is a cooperative program involving the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor and the State Employment Security Agencies (SESAs). The ES-202 program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program.

Since coverage is so broad (approximately 98 percent of all non-farm wage and salary employment), the ES-202 program provides a virtual census of these employees and their wages. It is the most complete and timely source of monthly employment and quarterly wages information by detailed industry and county.

The BEA uses the macro level ES-202 data for sampling purposes. These BLS programs and surveys are *Current Employment Statistics; Occupational Employment Statistics; Producer Price Index; Occupational Safety and Health Surveys; Occupational Compensation Survey; Employer Benefits Survey; Employment Cost Index Survey; and, Productivity Surveys.*

STATE ECONOMIC DATA SOURCES

Louisiana
Louisiana Electronic Assistance Program
URL:http://leap.nlu.edu/
Louisiana State Census Data Center
URL:http://www.state.la.us/state/census/census.htm
Texas
Center for Business and Economic Analysis at Texas A&M University
URL:http://cbea.tamu.edu/
Texas State Data Center
URL:http://www-txsdc.tamu.edu/
Texas Department of Economic Development
URL:http://community.tded.state.tx.us/
Mississippi
Gulf South Economic Research Center at University of Southern Mississippi
URL:http://www.gserc.usm.edu/
Mississippi State Data Center
URL:http://www.olemiss.edu/depts/population_studies/
Alabama
Center for Business and Economic Research at University of Alabama
URL:http://www.cba.ua.edu/~cber/index.html
Alabama Department of Industrial Relations
URL:http://www.dir.state.al.us/

Table A-C

Various Labor Sources Identified by ICF Consulting.

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
ES 202 (Covered Employment and Wages)	National to State to County or Parish	No	4-digit Standard Industrial Classification (SIC) and County Level.	Monthly employment and quarterly wages information at the 4-digit SIC and county level for both private and government entities. Some information is held in confidence for local employers' privacy because a person can infer whose data is represented in the county.	Monthly, quarterly	Similar data since 1938	U.S. Bureau of Labor Statistics (BLS). The Texas Workforce Commission, Alabama Department of Industrial Relations—Research & Statistics Division, Mississippi Labor Market Information Department, and Louisiana Department of Labor are the four agencies which collect Labor Market Information for their States and BLS.		Publicly available files include data on the number of establishments, monthly employment, and quarterly wages, by industry, at the 4-digit Standard Industrial Classification (SIC) level, by county, by ownership sector, for the entire United States. These data are aggregated to annual levels, to higher industry levels (3-digit, 2-digit, industry division and totals), and to higher geographic levels (national, State, and Metropolitan Statistical Area (MSA)). At the national level, the ES-202 program publishes employment and wage data for 1,217 series, or nearly every 4-digit SIC. At the State and area level, the ES-202 program publishes employment and wage data down to the 4-digit SIC level, if disclosure restrictions are met. In accordance with BLS policy, the ES-202 program does not disclose data for any level in which the universe (1) consists of fewer than three UI accounts; or (2) is dominated by a single UI account that represents 80 percent or more of employment. ES-202 data can be acquired from the U.S. BLS or any one of the State Employment Security Agencies (SESA's). ES-202 data is used by other government agencies to produce publications of their own.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
County Wage and Salary Summary CA-34	State, County, and Metropolitan Statistical Areas	No	Wage and salary estimates, which comprise approximately 56 percent of personal income, are presented by place of work. Personal income by county, which will be released May 4, 1998, is presented by place of residence.	Total wage and salary disbursements, total wage and salary employment, and average wage per job.	Annually	1969	Bureau of Economic Analysis	Free	Total wage and salary disbursements, total wage and salary employment, and average wage per job for 1969-96 for the States, counties, and metropolitan areas of the United States, was released December 30, 1997. These estimates are the first release of county estimates for 1996 from BEA. The wage and salary estimates, which comprise approximately 56 percent of personal income, are presented by place of work. Personal income by county, which will be released May 4, 1998, is presented by place of residence.
Employment Projections	State	No	2, 3, 4-digit SIC code	Employment projections for 2000, 2005, 2010, 2015, 2025, 2045.	Annual	1969	Bureau of Economic Analysis	Free	

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Occupational Employment Wage Estimates	National to State to County or Parish to Metropolitan Statistical Area	No	2-3 digit SIC groups/5-digit OES groupings	• OES Code: a unique, five-digit numerical identifier for each OES occupation. • Occupation Title: a descriptive title that corresponds to the OES code. • Employment: the estimated total occupational employment. • Mean Wage: the estimated total wages of an occupation divided by its estimated employment. • Median Wage: the estimated 50th percentile of the distribution of wages; fifty percent of workers in an occupation earn wages below the median wage, and fifty percent earn wages above the median wage.	Annually	1970-1997	The Texas Workforce Commission, Alabama Department of Industrial Relations—Research & Statistics Division, Mississippi Labor Market Information Department, and Louisiana Department of Labor are the four agencies which collect Labor Market Information for their States and BLS.	Fee not stated	Data from the ES-202 program serve as an important input to many BLS programs. The ES-202 data are used as the benchmark source for employment by the Current Employment Statistics program and the Occupational Employment Statistics program. Bureau of Labor Statistics, Occupational Employment Statistics. oesinfo@bls.gov Atlanta Regional Office Tel: (404) 562-2463 http://www.bls.gov/oes_con.htm

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Local Area Unemployment Statistics (LAUS)	National to Local, see Source and Notes section	No	Census regions and divisions, states, the District of Columbia, and Puerto Rico, metropolitan statistical areas and primary metropolitan statistical areas, non-metropolitan labor market areas, counties and county equivalents, cities of 25,000 population or more, cities, towns, and unorganized areas in New England, and parts of cities listed above which cross county boundaries.	The LAUS program provides monthly and annual average estimates for labor force, employment, unemployment, and the unemployment rate for some 6,700 areas.	Monthly		Bureau of Labor Statistics	Free	All cities and towns in New England, cities of 25,000 population or more, counties and county equivalents, metropolitan statistical/primary metropolitan statistical areas, and all States. The areas include census regions and divisions, states, metropolitan statistical areas (MSAs), primary metropolitan statistical areas (PMSAs), labor market areas (LMAs), counties and county equivalents, cities with a population of 25,000 and over, and cities and towns in New England.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Current Employment Statistics (CES)	National, Region, and State	No	Annual Employment and Unemployment for State (Seasonally Adjusted), Regional (Seasonally Adjusted), Metropolitan Area, and Nonfarm Payroll by state and major industry (Seasonally Adjusted).	The CES Survey is a monthly survey of business establishments which provides estimates of employment, hours, and earnings data by industry for the nation as a whole, all States, and most major metropolitan areas since 1939.	Monthly	1939	BLS and SESA's		The LAUS and CES programs are both Federal-State cooperative endeavors like the ES-202 program.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Current Population Survey	National and State	No	Varies	Provides a comprehensive body of information on the employment and unemployment experience of the Nation's population, classified by age, sex, race, and a variety of other characteristics. See Source and Notes section for more detail.	Varies		U.S. BLS and U.S. Census		• Employment status of the civilian noninstitutional population 16 years and over by age, sex, race, Hispanic origin, marital status, family relationship, and Vietnam-era veteran status, region, State, and selected areas. • Employed persons by occupation, industry, class of worker, hours of work, full- or part-time status, and reasons for working part time. • Employed multiple jobholders by occupation, industry, numbers of jobs held, and full- or part-time status of multiple jobs. • Unemployed persons by occupation, industry, class of worker of last job, duration of unemployment, reason for unemployment, and methods used to find employment. • Discouraged workers and other persons not in the labor force. • Special topics such as the labor force status of particular subgroups of the population (e g., women maintaining families, working women with children, displaced workers, and disabled veterans). Data are also available on work experience, occupational mobility, job tenure, educational attainment, and school enrollment of workers. • Information on annual, weekly, and hourly earnings by detailed demographic group and full- and part-time employment status, including data on the earnings of individual workers in relation to the earnings and employment status of other members of the family.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
U.S. Census County Business Patterns	National, State, and county level	No	Business data by 2, 3, and 4-digit SIC codes.	Covers number of business establishments, employment, taxable payrolls by industry groups. Information on finance, insurance and real estate sectors are included.	Annually	Since 1964	Public-use data files are available on a flow basis from the US Census starting about 16 months after each reference year. Files provide all data published in the annual reports with some additional detail (such as county-level summary data for industries with fewer than 100 employees). Files are available in magnetic computer tape, floppy diskette, and compact disc (CD-ROM) formats.		Provides the only source of annual, complete, and consistent county-level data for U.S. business establishments, with industry detail. County Business Patterns reports are available on a flow basis starting about 16 months after each reference year. Reports provide complete annual data for each state, each county area, the District of Columbia, and the Commonwealth of Puerto Rico, plus a U.S. summary. Data include number of establishments by employment size class and 4- digit SIC, quarterly and annual payroll, and employment during the week of March 12. Data for central administrative units and auxiliary establishments of multiestablishment businesses are shown as subtotals for each SIC Division. New ZIP Code tabulations provide aggregated data by 5-digit ZIP code area for 1994 and subsequent years. Data are on CD-ROMs; include total establishments, quarterly and annual payroll, and March 12 employment; and show number of establishments by employment size class for 4-digit SIC industries.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
USA Counties	50 states and District of Columbia, 3,141 counties or county equivalent	No	Over 3,000 data items, including age, agriculture, ancestry, banking, business, construction, crime, education, elections, Federal government, local government, Hispanic-origin, health, households, housing, labor force and employment, land area, manufactures, money income, personal income and earnings, earnings by industry, population, poverty, retail trade, service industries, social insurance and human services, veterans, vital statistics, wholesale trade, journey to work.	Includes files of data gathered from a variety of federal agencies and national associations. Demographic, economic and government data by State, county, and city.	Annual	1992, 1994,1996	Technical Documentation included on disc (to have selected portions printed or to discuss contents of this documentation call Statistical Compendia Staff on 301-457-1166). For credit card or census deposit account payment, call Customer Services, Bureau of the Census (Phone: 301-457-4100; FAX: 888-249-7295 (toll-free) or 301-457-3842).	$150	File format: dBase III+; disc comes with "GO" display/retrieval software. Includes all county data from the 1994, 1988, 1983 County and City Data Books and the 1991 and 1986 State and Metropolitan Area Data Books.
Enterprise Statistics	National	No	All multi-establishment companies in industries covered in the economic censuses and auxiliary establishments of companies (e.g., headquarters	Selected establishment data from the censuses consolidated to the enterprise (company-wide) level; supplementary data for large	Every 5 years	Since 1967	U.S. Census		http://www.census.gov/econ/www/mu0100.html The Bureau of Economic Analysis uses these data for input-output studies and to calculate the Gross Domestic Product. The Small Business Administration uses the data to determine industry size standards for small businesses. The Census Bureau uses the data to benchmark results of the Plant and Equipment Survey. Provides the only source of economy-wide

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
			offices, research and development facilities, and data processing centers). For 1992, the economic censuses covered most businesses in 8 SIC Divisions: construction; finance, insurance, and real estate; manufacturing; mining; retail trade; services; transportation, communications, and utilities; and wholesale trade. For 1992, nearly 165,000 multi-establishment companies operated in about 1.3 million separate business locations.	multi-establishment companies; and establish-ment data for all company auxiliaries. Consolidated company data include sales, employment, payroll, form of organization and enterprise industry classification. Supplementary data for large companies include inventories, assets, fringe benefits, capital and research and develop-ment (R&D) expenditures, and depreciation. Data for auxiliaries include sales, employment and payroll l, billings, inventories, capital and R&D expenditures, and selected purchased services.					company-level statistics, and data to relate the activities of companies and their affiliated establishments.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Standard Statistical Establishment List	National	No	Establishments of all domestic employer and nonemployer businesses (except private households and governments) and organizational units of multiestablishment businesses.	SSEL information is establishment-based and includes business location, organization type (e.g., subsidiary or parent), industry classification, and operating data (e.g., receipts and employment). The scope, detail, and reference period for SSEL information vary by establishment type and size; and the source of list information. SSEL information is maintained separately for each establishment, company, and major intra-company organizational unit.	SSEL listings are initiated and updated continuously	1972	U.S. Census		Businesses are legal or administrative entities assigned an Employer Identification Number (EIN) by the Internal Revenue Service, and units include divisions, subsidiaries, companies, and other affiliated organizations. The Standard Statistical Establishment List (SSEL) covers more than 180,000 multiunit companies, representing 1.5 million affiliated establishments, 5 million single-establishment companies, and nearly 14 million nonemployer businesses. The SSEL is used throughout Census Bureau economic data programs, but data for individual establishments are not available for public use because Federal law prohibits disclosure of individual business information. However, SSEL information is the primary source of summary statistics published in annual County Business Patterns reports, and is a resource used in responding to requests for special summary reports and reimbursable tabulations. The frequency for updating individual data items varies from every quarter to every 5 years. Provides the most complete, current, and consistent source of establishment- based information about U.S. businesses, and is essential to assuring full coverage and high quality in Federal economic statistics programs.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Company Organization Survey	National	No	All multiestablishment companies with payroll, and their establishments, except companies engaged exclusively in agricultural production (SIC major groups 01 and 02). In 1994, there were more than 180,000 large and small multiestablishment companies.	Companies identify establishments that have been sold, closed, continued, started, and acquired; report first quarter and annual payroll, and employment during the pay period that included March 12, for each establishment; indicate any large foreign equity positions; and indicate controlling interests held by other domestic or foreign-owned organizations.	Annually	1974	U.S. Census		This survey is taken primarily to assure full coverage and high quality of other statistical programs, and does not routinely provide data products for public use. Survey results are available to the Census Bureau about 8 months after each reference year and are used throughout Census Bureau economic data program operations, as a major source of information for County Business Patterns reports, and as a resource in responding to requests for a variety of special reports and reimbursable tabulations. The Census Bureau uses the survey data and other information contained in the SSEL (such as data for single-establishment companies) to produce annual County Business Patterns reports. These reports provide summary statistics by state, county, some ZIP Codes, and 4-digit SIC, including number of establishments, payroll, and employment. Provides the only direct source of information on changes in multiestablishment company organization and industry classification at the establishment level.

Table A-C. Various Labor Sources Identified by ICF Consulting (continued).

Title of Data Source	Region	Offshore Data?	Grouped by:	Description of Data in the Data Source	Reporting Period	Historical Availability	Contact Information	Cost	Source and Notes
Louisiana Mid-Continent Oil and Gas Association	Louisiana	Yes	• Exploration & production • Refining; • Oil, Products pipelines; • Gas utilities; • Marketing	• Louisiana Oil and Gas Production Data for the Entire State, Northern, Southern Onshore and Southern Offshore (1991-1996) • Drilling Costs for 1995 • Louisiana Royalty and Severance Tax Revenues • Parish Oil and Gas Activity Profiles • Employment Statistics (Direct employment by group) 1975-1996 • Gasoline Prices • and many more	Annually		General info: *Tel:* (504) 387-3205 *Fax:* (504) 344-5502 lmoga@lmoga.com	Free	Louisiana Mid-Continent Oil and Gas Association. Has data for total state, north, south and offshore LA, federal OCS, Deepwater Gulf, and U.S. Louisiana Mid-Continent Oil and Gas Association also has data on royalty, gas severance, oil severance, gas/mcf, oil/bbl for each parish in LA. http://www.lmoga.com

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.