BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM) / BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT (BSEE)
PACIFIC OCS REGION

FIELD RESERVE ESTIMATE SUMMARY

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Purpose of this Summary

This document summarizes the results of the Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE), Pacific OCS Region's Field & Reservoir Reserve Estimates Report (FRRE). The full FRRE Report breaks down POCS reserves and known resources by field as well as productive zone. This is an annual report and is for internal use only. In this summary only the field reserves/resources are reported. Detailed descriptions of reserves and fields can be found in the POCS Region Reserves Reports available on our website at http://www.boem.gov/Oil-and-Gas-Energy-Program/Resource-Evaluation/Reserves-Inventory/RI-Pacific.aspx. It is our hope that these summaries will provide valuable information regarding reserves and production during the intervening period between Reserve Reports.

In 2010 the Pacific Region of the Bureau of Ocean Energy Management, Regulation and Enforcement reclassified POCS reserves using the latest terminology and classification scheme published by the SPE in 2007. This major revision to their reserves classification system is called the Petroleum Resource Management System and is described by SPE as follows:

"A new Petroleum Resources Management System was approved by the Society of Petroleum Engineers (SPE) Board of Directors in March 2007, culminating two years of intense collaboration by SPE, the World Petroleum Council (WPC), the American Association of Petroleum Geologists (AAPG), and the Society of Petroleum Evaluation Engineers (SPEE). The system also was approved by the boards of the other societies following a significant industry review and comment period.

Coordinated by the SPE Oil and Gas Reserves Committee (OGRC), the new Petroleum Resources Management System consolidates, builds on, and replaces guidance previously contained in the 1997 SPE/WPC Petroleum Reserves Definitions, the 2000 SPE/WPC/AAPG Petroleum Resources Classification and Definitions publications, and the 2001 SPE/WPC/SPEE Guidelines for the Evaluation of Petroleum Reserves and Resources. New reserves auditing guidelines to accompany the new Petroleum Resources Management System were also approved by the SPE Board."

Through a significant effort of the Resource Evaluation Regional Offices led by the Gulf of Mexico, and BOEM's (formerly part of BOEMRE) Resource Evaluation Division we have adopted the PRMS to meet the requirements of BOEM's Reserves Inventory Program.

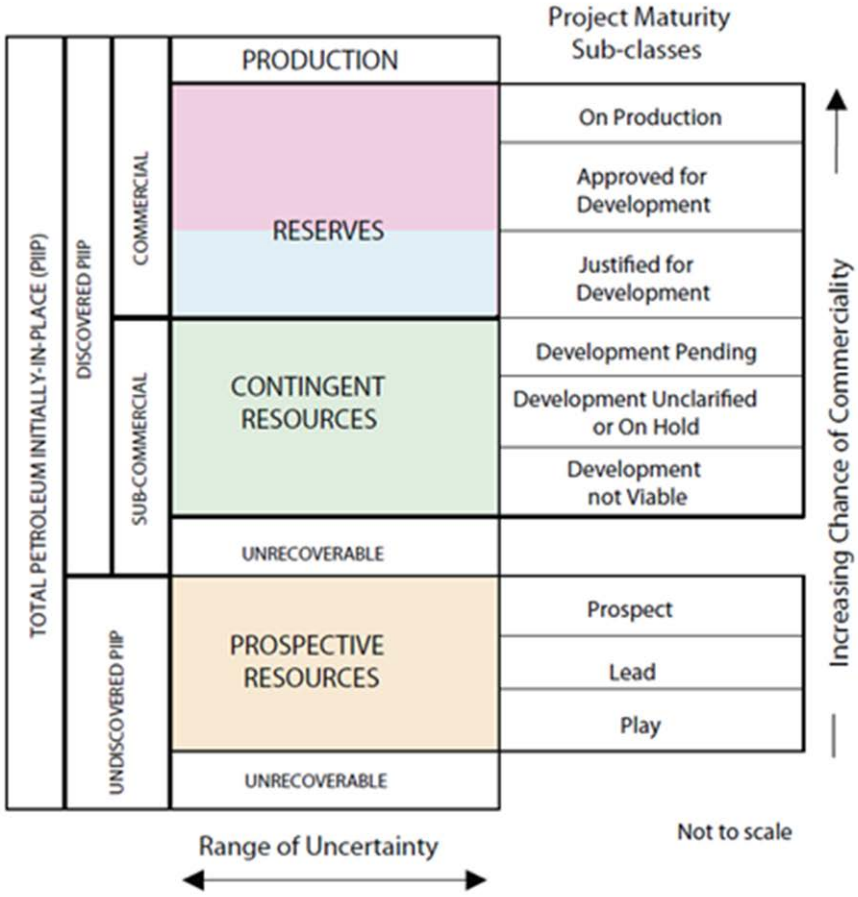

Figure 2-1: Sub-classes based on Project Maturity.

from PRMS, page 7

Definitions Used in this Summary

Approved for Development: Necessary approvals have been obtained, capital funds have been committed, and implementation of the development project is under way.

Barrel: A volumetric unit of measure for crude oil equivalent to 42 U.S. gallons.

Commercial: When a project is commercial, this implies that the essential social, environmental and economic conditions are met, including political, legal, regulatory and contractual conditions. In addition, a project is commercial if the degree of commitment is such that the accumulation is expected to be developed and placed on production within a reasonable time frame. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. In all cases, the justification for classification as Reserves should be clearly documented.

Conditions/Contingencies: The economic, marketing, legal, environmental, social, and governmental factors forecast to exist and impact the project during the time period being evaluated.

Cumulative Production: The sum of all produced volumes of oil and gas prior to a specified date.

Developed Producing Reserves: Developed Producing Reserves are expected to be recovered from completion intervals that are open and producing at the time of the estimate. Improved recovery reserves are considered producing only after the improved recovery project is in operation (see Proved Developed Producing Reserves).

Developed Non-Producing Reserves: Developed Non-Producing Reserves include shut-in and behind-pipe Reserves. Shut-in Reserves are expected to be recovered from (1) completion intervals which are open at the time of the estimate but which have not yet started producing, (2) wells which were shut in for market conditions or pipeline connections, or (3) wells not capable of production for mechanical reasons. Behind-pipe Reserves are also those expected to be recovered from zones in existing wells which will require additional completion work or future recompletion prior to start of production. In all cases, production can be initiated or restored with relatively low expenditure compared to the cost of drilling a new well. (See Proved Developed Nonproducing Reserves).

Development Not Viable: A discovered accumulation for which there are no current plans to develop or to acquire additional data at the time due to limited production potential. A project maturity sub-class that reflects the actions required to move a project towards commercial production.

Development Pending: A discovered accumulation where project activities are ongoing to justify commercial development in the foreseeable future. A project maturity sub-class that reflects the actions required to move a project towards commercial production. The operator has demonstrated a financial commitment to project development.

Development Unclarified or On Hold: A discovered accumulation where project activities are on hold and/or where justification as a commercial development may be subject to significant delay. A project maturity sub-class that reflects the actions required to move a project toward commercial production. Includes inactive leases, (i.e. expired, terminated, relinquished, or in litigation).

Discovered Petroleum-initially-in-place: Discovered Petroleum Initially-in-Place is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production. Discovered Petroleum Initially-in-Place may be subdivided into Commercial, Sub-Commercial, and Unrecoverable, with the estimated commercially recoverable portion being classified as Reserves and the AAPG 2007 estimated sub-commercial recoverable portion being classified as Contingent Resources.

Not Commercial: Project not able to be developed at a profit under current economic conditions and fiscal terms, nor under such conditions and terms that may be expected in the future based on current information.

On Production: The development project is currently producing and selling petroleum to market. A project status/maturity sub-class that reflects the actions required to move a project toward commercial production.

Original Recoverable Reserves/Estimated Ultimate Recovery (EUR): Those quantities of petroleum which are estimated, on a given date, to be potentially recoverable from a known accumulation, plus those quantities already produced there from.

Outer Continental Shelf: The continental margin, including the shelf, slope, and rise, beyond the line that marks the boundary of state ownership; that part of the seabed under Federal jurisdiction.

Petroleum Initially-in-Place (PIIP): Petroleum Initially-in-Place is the total quantity of petroleum that is estimated to exist originally in naturally occurring reservoirs. Crude Oil-in-place, Natural Gas-in-place, and Natural Bitumen-in-place, are defined in the same manner.

Play: A group of known and/or postulated pools that share common geologic, geographic, and temporal properties, such as history of hydrocarbon generation, migration, reservoir development, and entrapment.

Production: Production is the cumulative quantity of petroleum that has been actually recovered over a defined time period. While all recoverable resource estimates and production are reported in terms of the sales product specifications, raw production quantities (sales and non-sales, including non-hydrocarbons) are also measured to support engineering analyses requiring reservoir voidage calculations.

Project Development On Hold: No current plans to develop or to acquire additional data at this time.

Project Development Pending: Requires further data acquisition and/or evaluation in order to confirm commerciality.

Reserves: Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: They must be discovered, recoverable, commercial, and remaining (as of a given date) based on the development project(s) applied.

Proved Reserves: Proved Reserves are those quantities of petroleum which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods, and government regulations.

Proved Developed Reserves: Proved Developed Reserves are those Proved Reserves that can be expected to be recovered through existing wells and facilities and by existing operating methods. Improved recovery reserves can be considered as Proved Developed Reserves only after an improved recovery project has been installed and favorable response has occurred or is expected with a

reasonable degree of certainty. Developed reserves are expected to be recovered from existing wells, including reserves behind pipe. Improved recovery reserves are considered developed only after the necessary equipment has been installed, or when the costs to do so are relatively minor. Developed reserves may be sub-categorized as producing or non-producing.

Proved Developed Nonproducing Reserves: Reserves subcategorized as non-producing include shut-in and behind-pipe reserves. Shut-in reserves are expected to be recovered from (1) completion intervals which are open at the time of the estimate, but which have not started producing, (2) wells which were shut-in for market conditions or pipeline connections, or (3) wells not capable of production for mechanical reasons.

Proved Developed Producing Reserves: Proved Developed Producing Reserves are expected to be recovered from completion intervals that are open and producing at the time of the estimate. Improved recovery reserves are considered producing only after the improved recovery project is in operation.

Proved Undeveloped Reserves: Proved Undeveloped Reserves are those Proved Reserves that are expected to be recovered from future wells and facilities, including future improved recovery projects which are anticipated with a high degree of certainty in reservoirs which have previously shown favorable response to improved recovery projects.

Reservoir Status: A hydrocarbon accumulation, within a field, categorized by producibility assurance and development certainty. Such events as drilling of appraisal wells, completion of regulatory requirements, awarding of contracts, and the abandonment of the reservoir cause the reservoir status to change over the life of the reservoir.
The reservoir status codes used by the BOEM/BSEE are:

- FAIL – A reservoir that contains only a well(s) that has a completion intended for continuous production but did not produce hydrocarbons. The completion interval is water, non-reservoir rock, or has experienced reservoir or mechanical failure. This status does not include a reservoir with drill stem or flow test only.
- OTHR – A reservoir that contains only a well(s) intended for water source or water disposal, etc.
- PDEP – A proved, depleted reservoir that has no future potential.
- PROD – A reservoir that has had production in the last 12 months.
- PROE – A reservoir that has a well(s) with a BOEM/BSEE DOCD/DPP approval, has a completion (see Completion), has production/pipeline facilities installed, and completions are non-producing or have not been on production within the last 12 months.
- RESC – A reservoir that has not been penetrated by a well. This can include undrilled fault blocks and undrilled seismic amplitudes.
- RESK – A reservoir that has been penetrated by a well but there is no active lease (expired, terminated, or relinquished) or the lease is in litigation. Also includes reservoirs with mechanical issues.

- RESP – A reservoir that has been penetrated by a well and is capable of production or a reservoir that is no longer on production but has the potential for future production.
- RESQ – A reservoir that has been penetrated by a well but production capability is questionable because of economics or reservoir or fluid characteristics.
- SALT – A salt reservoir.
- SULF – A sulphur reservoir.
- UNDV – A reservoir that has a well(s) with funding committed by the operator for reservoir development. A BOEM/BSEE DOCD/DPP has been approved and all necessary permits have been attained. Has active well penetrating it but has no completions or production/pipeline facilities are damaged (i.e. fire or hurricane damage).
- UNPV – A reservoir that has been penetrated by a well(s) on an active lease with funding committed by the operator for reservoir development and a BOEM/BSEE DOCD/DPP has been submitted.

Sub-Commercial: A project is Sub-commercial if the degree of commitment is not such that the accumulation is expected to be developed and placed on production within a reasonable time frame. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. Discovered sub-commercial projects are classified as Contingent Resources.

Unproved Reserves: Unproved Reserves are based on geologic and/or engineering data similar to that used in estimates of proved reserves; but technical, contractual, economic, or regulatory uncertainties preclude such reserves being classified as proved.. Unproved reserves may be estimated assuming future economic conditions different from those prevailing at the time of the estimate.

2010 POCS Reserves and Cumulative Production Summary		
Reserves:	**Oil (bbl)**	**Gas (Mcf)**
Cumulative Production	**1,257,671,833**	**1,707,126,968**
Remaining Proved Reserves	**346,807,332**	**655,546,291**
Total Cumulative Production and Reserves	**1,604,479,165**	**2,362,673,259**
Contingent Resources:	**Oil (bbl)**	**Gas (Mcf)**
Contingent Resources on Active Lease	**116,461,420**	**159,274,607**
Contingent Resources on Expired Leases	**1,191,418,000**	**770,691,000**
Total Contingent Resources	**1,307,879,420**	**929,965,607**

Proved Reserves									
CATEGORY	**FIELD**	**Original Recoverable Reserves**		**Cumulative Production**		**Annual Production**		**Remaining Reserves** *Volumes of gas that have been reinjected into the reservoir are added to remaining reserves (Hondo, Pescado, & Pt. Arguello)	
		Oil, bbl	**Gas, Mcf**	**Oil, bbl**	**Gas, Mcf**	**Oil, bbl**	**Gas, Mcf**	**Oil, bbl**	**Gas, Mcf***
PROD	**BETA**	113,700,000	36,800,000	92,280,912	30,067,720	1,564,879	447,779	21,419,088	6,732,280
	CRPNTR	74,100,000	62,500,000	70,334,275	58,569,662	450,083	457,843	3,765,725	3,930,338
	DSCDRS	280,000,000	186,000,000	263,956,284	152,795,960	1,158,945	1,780,635	16,043,716	33,204,040
	HONDO	392,600,000	792,700,000	290,871,386	635,284,889	5,103,154	13,482,795	101,728,614	337,419,598
	HUENEM	11,800,000	13,150,000	11,456,205	8,461,462	110,313	848,942	343,795	4,688,538
	PESCDO	182,420,000	167,764,000	135,978,726	205,683,924	3,950,256	9,010,949	46,441,274	91,468,383
	PITSPT	210,500	239,215,000	208,724	231,321,450	617	955,784	1,776	7,893,550
	PTARGL	200,000,000	122,500,000	181,369,119	158,676,419	1,969,836	7,848,017	18,630,881	50,375,481
	PTPDNS	106,000,000	42,400,000	87,883,031	31,234,821	2,134,927	1,153,634	18,116,969	11,165,179
	RCKYPT	21,000,000	15,000,000	2,468,725	1,936,408	124,817	135,228	18,531,275	13,063,592
	SACATE	122,650,000	110,234,000	34,441,658	30,936,883	3,206,868	3,303,649	88,208,342	79,297,117
	SNTCLR	47,266,665	71,115,565	44,127,464	68,129,353	622,887	469,403	3,139,201	2,986,212
	SOCKEY	52,732,000	107,350,000	42,295,324	94,028,017	1,303,651	1,304,634	10,436,676	13,321,983
Total Reserves		1,604,479,165	1,966,728,565	1,257,671,833	1,707,126,968	21,701,233	41,199,292	346,807,332	655,546,291

Reserves Classification

As of December 31, 2008 BOEMRE bases its classification of Reserves and Resources on the *Petroleum Resources Management System (PRMS)* which was developed by the SPE/AAPG/WPC and published in 2007. It is available at:
(http://www.spe.org/about/media/docs/Petroleum_Resources_Management_System_2007.pdf).

Note 1 Dos Cuadras, Hondo, Pescado, Pt. Arguello, Rocky Pt., Sacate, and Santa Clara producing fields also contain reservoirs classified as Contingent Resources (RESQ or RESK). The total volume of contingent resources in these fields is: 34,065,420 bbl oil; 104,302,607 Mcf natural gas

Note 2 Three reservoirs in the Santa Clara field have been depleted and are now classified as PDEP. The remaining resources in these reservoirs are now classified as Contingent Resources (RESQ): 986,420 bbl oil; 765,651 Mcf natural gas

Reserves Categories

PROD Proved Developed Producing (Has had production in the last 12 months)
PDEP Proved Depleted

Contingent Resources Categories

CR Contingent Resources
RESK Development Unclarified or On Hold
RESQ Development Not Viable (Res. Size/Economics)

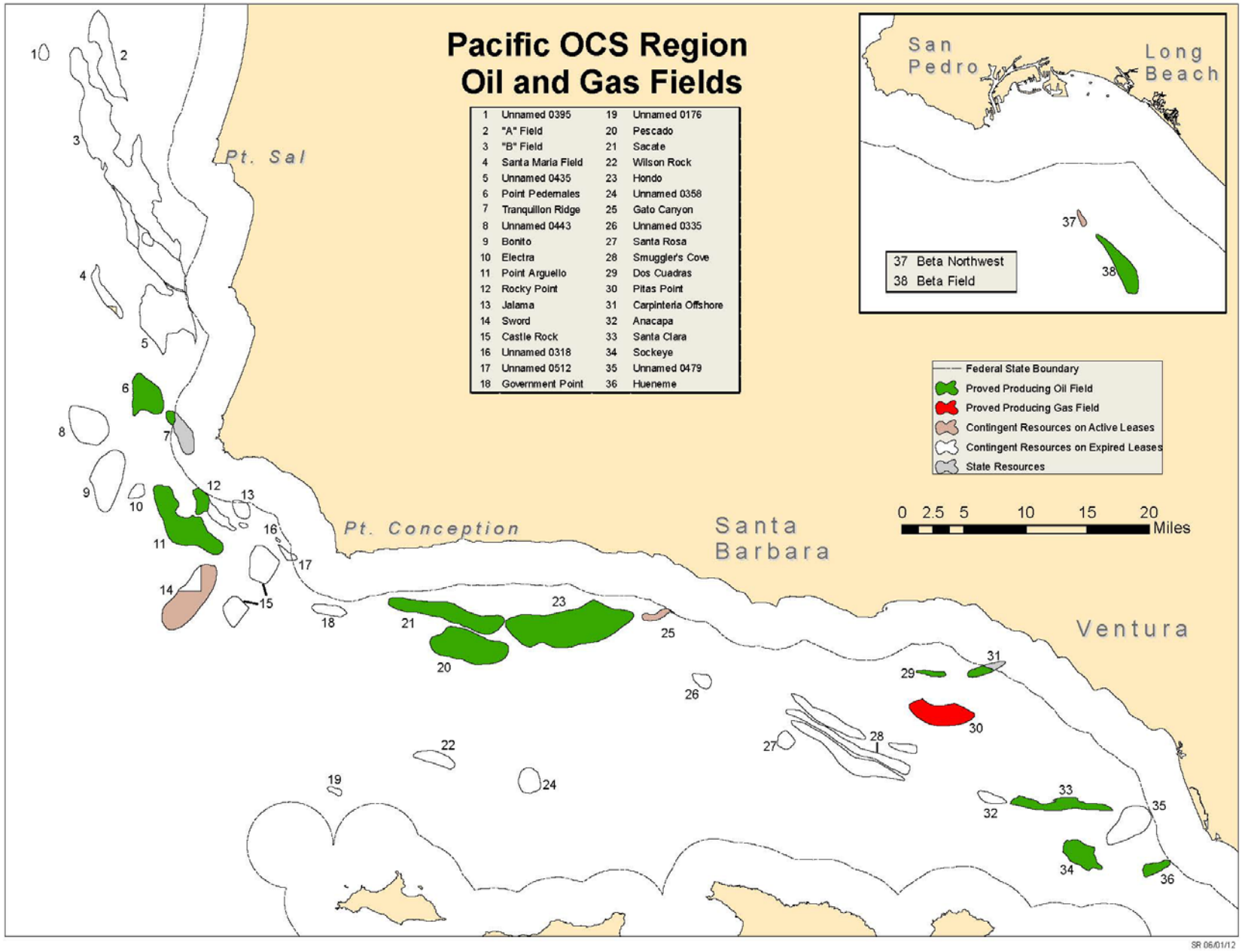

Figure 2: Oil and Gas Fields of the Pacific OCS Region