

DATE IN 3/9/04	SUSPENSE	ENGINEER WVS	LOGGED IN LR	TYPE DHC	APP NO. PLR0406946745
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



4/6/04
DHC-3255

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
 [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
 [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR
 [D] Other: Specify _____

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Oil Conservation Division
 1220 S. St. Francis Drive
 Santa Fe, NM 87505

- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☒ Does Not Apply
 [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☐ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached

- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Mary Corley
 Print or Type Name

Mary Corley
 Signature

Sr. Regulatory Analyst **03/03/2004**
 Title Date
corleym@bp.com
 e-mail Address

District I
1625 N. French Drive, Hobbs, NM 88240
2000
District II
811 South First Street, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
Pools
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised May 15,

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87505

APPLICATION TYPE

☒ Single Well
☐ Establish Pre-Approved

EXISTING WELLBORE

☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

BP America Production Company P. O. Box 3092 Houston, TX 77253

Operator Address
Warren LS 5 Unit G Section 24 T28N, R09W San Juan
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 000778 Property Code 001212 API No. 30-045-13253 Lease Type: ☒ Federal ☐ State ☐ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Aztec Pictured Cliffs ☒	Otero Chacra ☒	Blanco Mesaverde ☒
Pool Code	71280 ☒	82329 ☒	72319 ☒
Top & Bottom of Pay Section (Perforated or Open-Hole Interval)	2230' - 2270'	Based on GR log	3980' - 4586'
Method of Production (Flowing or Artificial Lift)	Flowing	Flowing	Flowing
Bottomhole Pressure	270	430 [Estimate]	480
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1107	1230 [Estimate]	1301
Producing, Shut-In or New Zone	Producing	New Zone	Producing
Date and Oil/Gas/Water Rates of Last Production.	Date: Rates:	Date: Rates:	Date: Rates:
Fixed Allocation Percentage	Oil % Gas %	Oil % Gas %	Oil % Gas %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones?
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail?

Yes ☒ No ☐
Yes ☐ No ☐

Are all produced fluids from all commingled zones compatible with each other?

Yes ☒ No ☐

Will commingling decrease the value of production?

Yes ☐ No ☒

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application?

Yes ☐ No ☐

NMOCD Reference Case No. applicable to this well:

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Mary Corley TITLE Sr. Regulatory Analyst DATE 03/03/2004

TYPE OR PRINT NAME Mary Corley TELEPHONE NO. (281) 366-4491

Warren LS 5

Future Production Decline Estimate

Pictured Cliffs Daily Rates

Month	Gas Volume
Jan-2003	213
Feb-2003	232
Mar-2003	196
Apr-2003	163
May-2003	162
Jun-2003	125
Jul-2003	120
Aug-2003	174
Sep-2003	160
Oct-2003	174
Nov-2003	141
Dec-2003	140
Jan-2004	140
Feb-2004	139
Mar-2004	139
Apr-2004	138
May-2004	138
Jun-2004	137
Jul-2004	137
Aug-2004	136
Sep-2004	136
Oct-2004	135
Nov-2004	135
Dec-2004	134
Jan-2005	134
Feb-2005	133
Mar-2005	133
Apr-2005	132
May-2005	132
Jun-2005	131
Jul-2005	131
Aug-2005	130
Sep-2005	130
Oct-2005	129
Nov-2005	129
Dec-2005	128

$$\ln(Q_f/Q_i) = -dt$$

$$Q_f = 160$$

$$Q_i = 163$$

$$\text{rate} = 160$$

$$\text{time} = 6$$

$$dt = -0.018576386$$

$$\text{decline} = -0.495370282$$

Month	Gas Volume
Jan-2006	128
Feb-2006	127
Mar-2006	127
Apr-2006	126
May-2006	126
Jun-2006	125
Jul-2006	125
Aug-2006	124
Sep-2006	124
Oct-2006	123
Nov-2006	123
Dec-2006	122
Jan-2007	122
Feb-2007	121
Mar-2007	121
Apr-2007	120
May-2007	120
Jun-2007	119
Jul-2007	119
Aug-2007	118
Sep-2007	118
Oct-2007	117
Nov-2007	117
Dec-2007	116
Jan-2008	116
Feb-2008	115
Mar-2008	115
Apr-2008	114
May-2008	114
Jun-2008	113
Jul-2008	113
Aug-2008	112
Sep-2008	112
Oct-2008	112
Nov-2008	111
Dec-2008	111
Jan-2009	110

Month	Gas Volume
Feb-2009	110
Mar-2009	109
Apr-2009	109
May-2009	108
Jun-2009	108
Jul-2009	107
Aug-2009	107
Sep-2009	106
Oct-2009	106
Nov-2009	105
Dec-2009	105
Jan-2010	104
Feb-2010	104
Mar-2010	103
Apr-2010	103
May-2010	102
Jun-2010	102
Jul-2010	101
Aug-2010	101
Sep-2010	101
Oct-2010	100
Nov-2010	100
Dec-2010	99
Jan-2011	99
Feb-2011	98
Mar-2011	98
Apr-2011	97
May-2011	97
Jun-2011	96
Jul-2011	96
Aug-2011	95
Sep-2011	95
Oct-2011	94
Nov-2011	94
Dec-2011	93
Jan-2012	93

Future Production Decline Estimate Pictured Cliffs Daily Rates

Month	Gas Volume
Feb-2012	92
Mar-2012	92
Apr-2012	91
May-2012	91
Jun-2012	90
Jul-2012	90
Aug-2012	89
Sep-2012	89
Oct-2012	88
Nov-2012	88
Dec-2012	87
Jan-2013	87
Feb-2013	86
Mar-2013	86
Apr-2013	85
May-2013	85
Jun-2013	84
Jul-2013	84
Aug-2013	83
Sep-2013	83
Oct-2013	82
Nov-2013	82
Dec-2013	81
Jan-2014	81
Feb-2014	80
Mar-2014	80
Apr-2014	79
May-2014	79
Jun-2014	78
Jul-2014	78
Aug-2014	77
Sep-2014	77
Oct-2014	76
Nov-2014	76
Dec-2014	75
Jan-2015	75

Month	Gas Volume
Feb-2015	74
Mar-2015	74
Apr-2015	73
May-2015	73
Jun-2015	72
Jul-2015	72
Aug-2015	71
Sep-2015	71
Oct-2015	70
Nov-2015	70
Dec-2015	69
Jan-2016	69
Feb-2016	68
Mar-2016	68
Apr-2016	67
May-2016	67
Jun-2016	66
Jul-2016	66
Aug-2016	65
Sep-2016	65
Oct-2016	64
Nov-2016	64
Dec-2016	63
Jan-2017	63
Feb-2017	62
Mar-2017	62
Apr-2017	61
May-2017	61
Jun-2017	60
Jul-2017	60
Aug-2017	59
Sep-2017	59
Oct-2017	58
Nov-2017	58
Dec-2017	57
Jan-2018	57

Month	Gas Volume
Feb-2018	56
Mar-2018	56
Apr-2018	55
May-2018	55
Jun-2018	54
Jul-2018	54
Aug-2018	53
Sep-2018	53
Oct-2018	52
Nov-2018	52
Dec-2018	51
Jan-2019	51
Feb-2019	50
Mar-2019	50
Apr-2019	49
May-2019	49
Jun-2019	48
Jul-2019	48
Aug-2019	48
Sep-2019	47
Oct-2019	47
Nov-2019	46
Dec-2019	46
Jan-2020	45
Feb-2020	45
Mar-2020	44
Apr-2020	44
May-2020	43
Jun-2020	43
Jul-2020	42
Aug-2020	42
Sep-2020	41
Oct-2020	41
Nov-2020	40
Dec-2020	40
Jan-2021	39

Month	Gas Volume
Feb-2021	39
Mar-2021	38
Apr-2021	38
May-2021	37
Jun-2021	37
Jul-2021	36
Aug-2021	36
Sep-2021	35
Oct-2021	35
Nov-2021	34
Dec-2021	34
Jan-2022	33
Feb-2022	33
Mar-2022	32
Apr-2022	32
May-2022	31
Jun-2022	31
Jul-2022	30
Aug-2022	30
Sep-2022	29
Oct-2022	29
Nov-2022	28
Dec-2022	28
Jan-2023	27
Feb-2023	27
Mar-2023	26
Apr-2023	26
May-2023	25
Jun-2023	25
Jul-2023	24
Aug-2023	24
Sep-2023	23
Oct-2023	23
Nov-2023	22
Dec-2023	22
Jan-2024	21

Warren LS 5

Future Production Decline Estimate

Mesaverde Daily Rates

Month	Gas Volume
Jan-2003	11
Feb-2003	71
Mar-2003	56
Apr-2003	53 **
May-2003	57
Jun-2003	50
Jul-2003	51
Aug-2003	51
Sep-2003	51 **
Oct-2003	48
Nov-2003	41
Dec-2003	40
Jan-2004	40
Feb-2004	40
Mar-2004	39
Apr-2004	39
May-2004	39
Jun-2004	39
Jul-2004	38
Aug-2004	38
Sep-2004	38
Oct-2004	37
Nov-2004	37
Dec-2004	37
Jan-2005	36
Feb-2005	36
Mar-2005	36
Apr-2005	35
May-2005	35
Jun-2005	35
Jul-2005	34
Aug-2005	34
Sep-2005	34
Oct-2005	33
Nov-2005	33
Dec-2005	33

$$\ln(Q_f/Q_i) = -dt$$

$$Q_f = 51$$

$$Q_i = 53$$

$$\text{rate} = 51$$

$$\text{time} = 6$$

$$dt = -0.038466281$$

$$\text{decline} = -0.326963387$$

Month	Gas Volume
Jan-2006	32
Feb-2006	32
Mar-2006	32
Apr-2006	31
May-2006	31
Jun-2006	31
Jul-2006	30
Aug-2006	30
Sep-2006	30
Oct-2006	29
Nov-2006	29
Dec-2006	29
Jan-2007	28
Feb-2007	28
Mar-2007	28
Apr-2007	27
May-2007	27
Jun-2007	27
Jul-2007	26
Aug-2007	26
Sep-2007	26
Oct-2007	25
Nov-2007	25
Dec-2007	25
Jan-2008	24
Feb-2008	24
Mar-2008	24
Apr-2008	23
May-2008	23
Jun-2008	23
Jul-2008	22
Aug-2008	22
Sep-2008	22
Oct-2008	22
Nov-2008	22
Dec-2008	21
Jan-2009	21

Month	Gas Volume
Feb-2009	21
Mar-2009	20
Apr-2009	20
May-2009	20
Jun-2009	19
Jul-2009	19
Aug-2009	19
Sep-2009	18
Oct-2009	18
Nov-2009	18
Dec-2009	17
Jan-2010	17
Feb-2010	17
Mar-2010	16
Apr-2010	16
May-2010	16
Jun-2010	15
Jul-2010	15
Aug-2010	15
Sep-2010	14
Oct-2010	14
Nov-2010	14
Dec-2010	13
Jan-2011	13
Feb-2011	13
Mar-2011	12
Apr-2011	12
May-2011	12
Jun-2011	11
Jul-2011	11
Aug-2011	11
Sep-2011	10
Oct-2011	10
Nov-2011	10
Dec-2011	9
Jan-2012	9

Warren LS 5
Future Production Decline Estimate
Mesaverde Daily Rates

Month	Gas Volume	Month	Gas Volume
Feb-2012	9	Feb-2015	4
Mar-2012	9	Mar-2015	4
Apr-2012	9	Apr-2015	4
May-2012	9	May-2015	3
Jun-2012	8	Jun-2015	3
Jul-2012	8	Jul-2015	3
Aug-2012	8	Aug-2015	3
Sep-2012	8	Sep-2015	3
Oct-2012	8	Oct-2015	3
Nov-2012	8	Nov-2015	3
Dec-2012	8	Dec-2015	2
Jan-2013	7	Jan-2016	2
Feb-2013	7	Feb-2016	2
Mar-2013	7	Mar-2016	2
Apr-2013	7	Apr-2016	2
May-2013	7	May-2016	2
Jun-2013	7	Jun-2016	2
Jul-2013	7	Jul-2016	1
Aug-2013	6	Aug-2016	1
Sep-2013	6	Sep-2016	1
Oct-2013	6	Oct-2016	1
Nov-2013	6	Nov-2016	1
Dec-2013	6	Dec-2016	1
Jan-2014	6	Jan-2017	1
Feb-2014	6	Feb-2017	0
Mar-2014	5	Mar-2017	0
Apr-2014	5	Apr-2017	0
May-2014	5	May-2017	0
Jun-2014	5	Jun-2017	0
Jul-2014	5	Jul-2017	0
Aug-2014	5	Aug-2017	0
Sep-2014	5	Sep-2017	0
Oct-2014	4	Oct-2017	0
Nov-2014	4	Nov-2017	0
Dec-2014	4	Dec-2017	0
Jan-2015	4	Jan-2018	0

Allocation Method
Warren LS 5

BP America Production Company request permission to complete the subject well into the Otero Chacra and tricomingle production downhole with the existing Aztec Pictured Cliffs and Blanco Mesaverde Pools as per the attached procedure.

The interest owners are identical between these three Pools, therefore, no additional notification is required prior to downhole commingling approval.

Production is proposed to be allocated based on the subtraction method using the projected future decline for production from the Pictured Cliffs and Mesaverde Pools. This production shall serve as a base for production subtracted from the total production for the commingled well. The balance of the production will be attributed to the Chacra. Attached are the future production decline estimates for the Pictured Cliffs & Mesaverde Pools.

Commingling Production Downhole in the subject well from the proposed pools with not reduce the value of the total remaining production.

Application has also been submitted to BLM on Form 3160-5, Federal Lease No. SF – 077112.

Pre Approved Pool:

Blanco-Mesaverde (72319) & Aztec-Pictured Cliffs (71280) Pools

Blanco-Mesaverde (72319) & Otero-Chacra (82329) Pools

Aztec-Pictured Cliffs (71280) & Otero-Chacra (82329) Pools

District I

1625 N. French Dr., Hobbs, NM 88240

District II

811 South First, Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources DepartmentOIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505Form C-102
Revised August 15, 2000Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-13253	² Pool Code 82329	³ Pool Name Otero Chacra
⁴ Property Code 001212	⁵ Property Name Warren LS	⁶ Well Number 5
⁷ OGRID No. 000778	⁸ Operator Name Amoco Production Company	⁹ Elevation

¹⁰ Surface Location

UL or lot no. Unit 6	Section 24	Township 28N	Range 09W	Lot Idn	Feet from 1850	North/South North	Feet from 1750	East/West East	County San Juan
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from	North/South	Feet	East/West	County
¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A
NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature Mary Corley Printed Name Sr. Regulatory Analyst Title 03/03/2004 Date	
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.	
	Date of Survey Signature and Seal of Professional Surveyor:	
	Certificate Number	