CASE 1772: Application of PAN AMER. for approval of automatic custody transfer system for 4 state leases. (Amend Order No. R-1292)

Case No.

1772

Application, Transcript,
Small Exhibits, Etc.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 1772
Order No. R-1292-A

APPLICATION OF PAN AMERICAN
PETROLEUM CORPORATION FOR AN
AMENDMENT TO ORDER NO. R-1292
TO PROVIDE FOR AUTOMATIC CUS-
TODY TRANSFER OF EMPIRE-ABO
PRODUCTION FROM FOUR STATE
LEASES IN EDDY COUNTY, NEW
MEXICO, PERMITTED TO BE COM-
MINGLED PURSUANT TO THAT ORDER

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 30, 1959, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 27th day of October, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant desires that Order No. R-1292 be amended to provide for automatic custody transfer of the Empire-Abo Pool production from the four state leases permitted to be commingled by that order.

(3) That the applicant proposes to measure the oil passing through said automatic custody transfer equipment by means of either dump-type or positive displacement meters.

(4) That the meters to be used in the above-described system should be checked for accuracy once each month and the results of such tests furnished to the Commission.

(5) That the above-described system should be so equipped as to prevent the undue waste of oil in the event of malfunction or flow-line break.

(6) That the previous use of automatic custody transfer equipment, similar to that proposed by the applicant, has shown that such equipment is a reliable and economic means of transferring the custody of oil and, that the use of such equipment should be permitted.

IT IS THEREFORE ORDERED:

(1) That Order No. R-1292 be and the same is hereby amended to authorize the installation of an automatic custody transfer system to handle the Empire-Abo Pool production from the four state leases permitted to be commingled by that order.

(2) That the above-described automatic custody transfer system shall be so equipped as to prevent the undue waste of oil in the event of malfunction or flow line break.

PROVIDED HOWEVER, That all provisions of Order No. R-1292 shall continue in full force and effect.

PROVIDED FURTHER, That both lease production meters and meters used in the automatic custody transfer system shall be operated and maintained in such a manner as to ensure an accurate measurement of the liquid hydrocarbon production at all times.

PROVIDED FURTHER, That all meters shall be checked for accuracy at least once each month until further direction by the Secretary-Director. Meters shall be calibrated against a master meter or against a test tank of measured volume and the results of such calibration filed with the Commission on the Commission form entitled "Meter Test Report."

DONE at Santa Fe, New Mexico on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN BURROUGHS, Chairman

MURRAY E. MORGAN, Member

A. L. PORTER, Jr., Member & Secretary

lcr/

DOCKET: EXAMINER HEARING SEPTEMBER 30, 1959

Oil Conservation Commission - 9 a.m., Mabry Hall, State Capitol, Santa Fe, New Mexico

The following cases will be heard before Daniel S. Nutter, Examiner, or A. L. Porter, Jr., Secretary-Director.

CONTINUED CASE

CASE 1739: Application of Shell Oil Company for approval of a unit agreemnt. Applicant, in the above-styled cause, seeks an order approving its Hemshaw Deep Unit Agreement comprising 4824 acres, more or less, of Federal and State lands in Township 16 South, Ranges 30 and 31 East, Eddy County, New Mexico.

NEW CASES

CASE 1760: Application of The Atlantic Refining Company for an automatic custody transfer system and for permission to produce more than 16 wells into a common tank battery. Applicant, in the above-styled cause, seeks an order authorizing it to install an automatic custody transfer system to handle the production from all Horseshoe-Gallup oil wells on its Navajo "B" Lease comprising certain acreage in Township 31 North, Range 16 West, San Juan County, New Mexico.

CASE 1761: Application of Stanton Oil Company, Ltd., for a pilot water flood project. Applicant, in the above-styled cause, seeks an order authorizing it to institute a pilot water flood project in the Turkey Track Pool in Eddy County, New Mexico, by the injection of water into the Queen formation through four wells located in Section 34, Township 18 South, Range 29 East.

CASE 1762: Application of Newmont Oil Company for an unorthodox water injection well location. Applicant, in the above-styled cause, seeks an order authorizing it to reopen and utilize for water injection a well located on an unorthodox location at a point 1620 feet from the North line and 1020 feet from the West line of Section 32, Township 16 South, Range 31 East, Square Lake Pool, Eddy County, New Mexico.

CASE 1763: Application of Southwestern Hydrocarbon Company for an order abolishing the Sawyer-San Andres and South Sawyer-San Andres Oil Pools in Lea County, New Mexico, and creating the Sawyer-San Andres Gas Pool; or in the alternative for an order extending the horizontal limits of the South Sawyer-San Andres Oil Pool to include the NE/4 of Section 6, the N/2 of Section 5 and the NW/4 of Section 4, Township 10 South, Range 38 East, Lea County, New Mexico, and removing all gas-oil ratio limitations for wells in said pool; or in the alternative for an order combining the Sawyer-San Andres and the South Sawyer-San Andres Oil Pools, as well as the intervening acreage, and removing all gas-oil ratio limitations for such pool.

CASE 1764: Application of Standard Oil Company of Texas for an unorthodox gas well location. Applicant, in the above-styled cause, seeks an order authorizing an unorthodox gas well location in the Atoka-Pennsylvanina Gas Pool, at a point 1850 feet from the South line and 1650 feet from the East line of Section 14, Township 18 South, Range 26 East, Eddy County, New Mexico.

CASE 1765: Application of The Ohio Oil Company for a salt water disposal well. Applicant, in the above-styled cause, seeks an order authorizing the disposal of produced salt water into the Lower San Andres formation through its State B-4286 "A" Well No. 2, located in Unit F, Section 2, Township 17 South, Range 36 East, Lea County, New Mexico. The proposed injection interval is from 5725 feet to 5968 feet.

CASE 1766: Application of Northwest Production Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its "S" Well No. 16-2, located in the SW/4 SW/4 of Section 2, Township 24 North, Range 4 West, Rio Arriba County, New Mexico, in such a manner as to produce oil from an undesignated Gallup oil pool and to produce oil from an undesignated Dakota oil pool through parallel strings of tubing.

CASE 1767: Application of El Paso Natural Gas Products Company for permission to produce more than 16 wells in a common tank battery. Applicant, in the above-styled cause, seeks an order authorizing the production of a maximum of 35 wells in the Horseshoe-Gallup Oil Pool into a common tank battery. Said wells are located on applicant's Horseshoe Ute Lease comprising portions of Sections 27, 28, 33 and 34, Township 31 North, Range 16 West, San Juan County, New Mexico.

CASE 1768: Application of T. F. Hodge for the rededication of acreage assigned to three oil wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order rededicating the acreage assigned to three oil wells on his Mary E. Wills Lease, Section 33, Township 26 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico. Applicant proposes to dedicate 40 acres to each of the three wells, said 40-acre units not to comprise a quarter-quarter section or legal subdivision.

CASE 1769: Application of Pan American Petroleum Corporation for approval of a unit agreement. Applicant, in the above-styled cause, seeks an order approving its Northeast Hogback Unit Agreement, comprising 10,572 acres, more or less, in Township 30 North, Range 16 West, San Juan County, New Mexico.

CASE 1770: Application of Pan American Petroleum Corporation for approval of a lease automatic custody transfer system. Applicant, in the above-styled cause, seeks an order authorizing the automatic custody transfer of oil produced from its Lois Wengerd Lease in Sections 23 and 24, Township 12 South, Range 37 East, Gladiola-Devonian Pool, Lea County, New Mexico.

CASE 1771: Application of Pan American Petroleum Corporation for approval of a lease automatic custody transfer system. Applicant, in the above-styled cause, seeks an order authorizing the automatic custody transfer of oil produced from its USA Malco Refinery "F" Lease, Section 1, Township 18 South, Range 27 East, Empire-Abo Pool, Eddy County, New Mexico.

CASE 1772: Application of Pan American Petroleum Corporation for approval of an automatic custody transfer system for four state leases in the Empire-Abo Pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order amending Order No. R-1292 to provice for automatic custody transfer of oil commingled thereunder.

CASE 1773: Application of Pan American Petroleum Corporation for approval of two automatic custody transfer systems for seven federal leases in the Empire-Abo Pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order amending Order No. R-1399 to provide for automatic custody transfer of oil produced into the two commingled tank batteries authorized therein.

CASE 1774: Application of Continental Oil Company for a non-standard gas unit. Applicant, in the above-styled cause, seeks the establishment of a 160-acre non-standard gas unit in an undesignated Tubb gas pool consisting of the E/2 NW/4 and the W/2 NE/4 of Section 15, Township 20 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to the applicant's Britt B-15 No. 10 Well, located in the SW/4 NE/4 of said Section 15.

CASE 1775: Application of Continental Oil Company for a non-standard gas unit. Applicant, in the above-styled cause, seeks the establishment of a 160-acre non-standard gas unit in an undesignated Tubb gas pool consisting of the E/2 SE/4 of Section 15 and the W/2 SW/4 of Section 14, all in Township 20 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to the applicant's SEMU Well No. 70, located in the NW/4 SW/4 of said Section 15.

CASE 1776: Application of Continental Oil Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for nine wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing the following-described wells in the Jalmat Gas Pool to compensate for their overproduced status without being completely shut-in in order to prevent possible waste:
Ascarate D-24 Well No. 1, Unit J, Section 24, T-25-S, R-36-E, Danciger A-8 Well No. 2, Unit P, Section 8, T-23-S, R-36-E, Jack A-20 Well No. 4, Unit G, Section 20, T-24-S, R-37-E, Jack A-29 Well No. 3, Unit H, Section 29, T-24-S, R-37-E, Meyer A-29 Well No. 1, Unit O, Section 29, T-22-S, R-36-E, Meyer B-28 Well No. 1, Unit E, Section 28, T-22-S, R-36-E, State A-32 Well No. 4, Unit F, Section 32, T-22-S, R-36-E, Stevens A-34 Well No. 1, Unit E, Section 34, T-23-S, R-36-E, Wells B-1 Well No. 1, Unit A, Section 1, T-25-S, R-36-E, all in Lea County, New Mexico.

CASE 1777: Application of El Paso Natural Gas Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for two wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing its E. J. Wells Lease Well No. 13, Unit L, Section 5, and its Wells B-4 Lease Well No. 1, Unit D, Section 4, both in Township 25 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, to compensate for their overproduced status without being completely shut-in in order to prevent possible waste.

CASE 1778: Application of Olsen Oils, Inc., for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for four wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing the following-described wells in the Jalmat Gas Pool to compensate for their overproduced status without being completely shut-in in order to prevent possible waste:
Cooper B Well No. 2, NE/4 NW/4 of Section 14, T-24-S, R-36-E, Myers B Well No. 1, SE/4 NW/4 of Section 13, T-24-S, R-36-E, S. R. Cooper Well No. 1, SE/4 NE/4 of Section 23, T-24-S, R-36-E,
Winningham Well No. 3, NE/4 SE/4 of Section 30, T-25-S, R-37-E,
all in Lea County, New Mexico.

CASE 1779: Application of Jal Oil Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for four wells in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing the following-described wells in the Jalmat Gas Pool to compensate for their overproduced status without being completely shut-in in order to prevent possible waste:
Legal Well No. 2, NE/4 SE/4 of Section 21,
Dyer Well No. 3, SE/4 NE/4 of Section 31,
Jenkins Well No. 2, NE/4 SW/4 of Section 29,
Ropollo Well No. 1, SW/4 NW/4 of Section 28,
all in Township 25 South, Range 37 East, Lea County, New Mexico.

CASE 1780: Application of Husky Oil Company for an exception to the overproduction shut-in provisions of Order R-520, as amended by Order R-967, for one well in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order allowing its Montecito Woolworth Well No. 2, Unit M, Section 33, Township 24 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, to compensate for its overproduced status without being completely shut-in in order to prevent possible waste.

CASE 1781: Application of Texaco, Inc. for permission to continue producing an over-produced Jalmat gas well at a lesser rate. Applicant, in the above-styled cause, seeks an order authorizing it to produce its C. C. Fristoe (b) NCT-4 Well No. 2, Unit M, Section 31, Township 24 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, at a maximum rate of 2500 MCF per month for lease use until over production has been compensated for.

ig/

PAN AMERICAN PETROLEUM CORPORATION

[illegible] AND GAS B[illegible]NG

FORT WORTH, TEXAS

ALEX CLARKE, JR.
DIVISION ENGINEER

August [illegible], [illegible]

File: [illegible]

Subject: LACT Hearing
Various Leases
Empire Abo Field
Eddy County, New Mexico

Mr. A. L. Porter
New Mexico Oil Conservation Commission
Capitol Annex Building
Santa Fe, New Mexico

Dear Sir:

As a result of hearing Case No. 1662 the New Mexico Oil Conservation Commission entered Order No. R-1399 giving Pan American Petroleum Corporation permission to commingle production from seven seperate Federal Leases in the Empire Abo Pool, Eddy County, New Mexico. Also as a result of hearing Case No. 1552, the New Mexico Oil Conservation Commission entered Order No. R-1292 giving Pan American Petroleum Corporation permission to commingle the production from four separate State leases. We now desire to install lease automatic custody transfer units to serve each of the commingled batteries. In addition, we desire to install a lease automatic custody transfer unit on our USA Malco Refinery "F" Lease, Empire Abo Pool, Eddy County, New Mexico. Therefore, it is respectfully requested that a hearing date be set on the earliest docket so that we may present our application to obtain approval for operation of these LACT Units.

Very truly yours,

Alex Clarke, Jr.

GWK:lj

Docket Mailed 9-15-59 [illegible]

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASES 1771, 1772, 1773

TRANSCRIPT OF HEARING

SEPTEMBER 30, 1959

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
SEPTEMBER 30, 1959

IN THE MATTER OF:

CASE 1771 Application of Pan American Petroleum Corporation for approval of a lease automatic custody transfer system. Applicant, in the above-styled cause seeks an order authorizing the automatic custody transfer of oil produced from its USA Malco Refinery "F" Lease, Section 1, Township 18 South, Range 27 East, Empire-Abo Pool, Eddy County, New Mexico.

CASE 1772 Application of Pan American Petroleum Corporation for approval of an automatic custody transfer system for four state leases in the Empire-Abo Pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order amending Order No. R-1292 to provide for automatic custody transfer of oil commingled thereunder.

CASE 1773 Application of Pan American Petroleum Corporation for approval of two automatic custody transfer systems for seven federal leases in the Empire-Abo Pool, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order amending Order No. R-1399 to provide for automatic custody transfer of oil produced into the two commingled tank batteries authorized therein.

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: We will take up the next case, Case 1771.

MR. NEWMAN: Kirk Newman, Atwood & Malone, Roswell,

New, Mexico, and Guy Buell, members of the Texas Bar of Fort Worth, Texas, representing the applicant.

MR. BUELL: May it please the Examiner, at this time I would like to move that Cases 1771, 1772 and 1773 be consolidated for the purpose of having a consolidated record of all these LACT installations, and these three cases are in the Empire-Abo Field and all are practically identical, one with the other.

MR. NUTTER: We will also now call Cases 1772 and 1773. Is there objection to that, counsel's motion for consolidation of Cases 1771, 1772 and 1773 for the purpose of taking the testimony? The cases will be consolidated.

MR. BUELL: We have one witness. Mr. Green, who was sworn in the prior case. Would you like to re-swear him?

MR. NUTTER: Let the record show that Mr. Green is the same Mr. Green who was sworn in the previous case.

ALBERT H. GREEN.

called as a witness, having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Green, will you state your full name, by whom you are employed, and in what capacity, and what location, please?

A Albert H. Green, employed by Pan American Petroleum Corporation as petroleum engineer, Lubbock, Texas, District office.

Q Mr. Green, you testified in prior Commission hearings,

and your qualifications -- or rather, a prior Commission hearing, I should say -- and your qualifications as an engineer are a matter of public record, are they not?

A Yes, sir.

MR. BUELL: Are his qualifications acceptable?

MR. NUTTER: Yes, sir. Please proceed.

(Thereupon, Pan American's Exhibit No. 1 was marked for identification.)

Q I direct your attention to what has been marked as Pan American's Exhibit No. 1. What is that Exhibit, Mr. Green?

A That is a plat of the Gladiola Pool, and identified thereon are the areas -- four areas -- in which Pan American proposes to install LACT units to serve Pan American's production from its Gladiola -- excuse me -- from Empire or Abo Pool.

Q What is the area outlined in brown on Exhibit 1?

A That is the Pan American's USA Malco "F" Lease.

Q That is one basic lease, and commingling is not involved with respect to that application?

A No, sir, it is not.

Q All right, sir. What is the area outlined in orange?

A That is the -- those are the State Leases which are served by what we identify as storage system 2.

MR. BUELL: In that connection, Mr. Examiner, with reference to the area outlined in orange that is composed of four separate State Leases, at a prior hearing under Case 1552, Order

R-1292 was issued authorizing commingling.

Q (By Mr. Buell) All right, sir. What is the area outlined in red?

A That is the area which is composed of Federal Leases, and is served by storage system 1.

Q All right, sir. Now, the area outlined in green?

A Those are also Federal Leases which are served by storage system 3.

MR. BUELL: I might state here, Mr. Examiner, that the area outlined in red and a portion of the green area were the subject matter of the hearing in Case 1551, as a result of that hearing, Order R-1295 was issued authorizing commingling from these separate Federal Leases. With respect to the area enclosed in green and red, that area was the subject matter of a commingling hearing under Case 1662, and Order R-1399 was issued amending Order R-1295, authorizing commingling of the leases that comprise the red and green.

MR. NUTTER: That Order authorizes the commingling of all the leases enclosed in the green line and red line?

MR. BUELL: Yes, sir.

Q (By Mr. Buell) Now, in that connection, these areas, the red area, the green area, the orange area are described. In the interest of saving time, I would like to ask Mr. Green to describe the Malco "F" area, the area outlined in brown only, for the record, since the other areas are described in the various Orders

which we recited, and are a matter of Commission Orders.

A The Malco "F" Lease is composed of the W/2 in the SW/4 of Section 1, Township 13 South, Range 27 East.

MR. NUTTER: And that is all one lease?

A That is one basic Federal Lease, yes, sir.

MR. BUELL: Mr. Examiner, I might direct your attention to what has been marked as Pan American's Exhibit No. 2, which is a brochure describing the LACT installation on our Malco "F" Lease. Exhibit No. 3, which is a brochure describing the LACT installation on the -- that would be served by storage system No. 1, which will be located in that area outlined in red on Exhibit 1.

MR. NUTTER: Now, let's see, what are the numbers?

MR. BUELL: Exhibit 2 is the Malco "F" Lease.

MR. NUTTER: And what storage -- that's Exhibit No. 2?

MR. BUELL: Yes, sir, Malco "F." Exhibit 3, storage system No. 1. Exhibit 4 storage system No. 2. And Exhibit 5, brochure on storage system No. 3.

MR. NUTTER: Exhibit 5.

MR. BUELL: And again, Mr. Nutter, these brochures are complete in detail. In the interest of saving time, we will simply cover what we think are the more pertinent points covered in detail in the brochure. Each one of these brochure Exhibits also has Attachments. Attachment 1 is a plat, Attachment 2 is a schematic flow diagram, Attachment 3 is a letter from the pipeline company which gathers the oil, signifying their complete concurrence in

our proposed installation and applicable. Attachment 4 will be a letter from the USGS or the State Land Commissioner, signifying their approval of these installations.

Q (By Mr. Buell) Now, Mr. Green, from the standpoint of the LACT equipment, are all four of these proposed installations identical?

A Yes, sir, they are.

Q For the purposes of this consolidated record, which one of these installations would you like to discuss?

A Since they are all identical, I suggest that we discuss the one for the Malco "F" Lease.

Q All right, sir. Before we get into that, would you briefly state, for the record, whether or not, in your opinion, the LACT installation, such as Pan American proposes, will serve conservation in that it will prevent physical waste and economical waste?

A Yes, sir, it will.

Q Briefly state in what fashion that will occur.

A The LACT unit will, first of all, conserve a portion of those light hydrocarbon vapors which are normally lost to the atmosphere with conventional lease operation. Secondly, it will conserve manpower both for the lease operator as well as the pipeline. And, thirdly, it will conserve capital investment since the LACT system costs less than does comparable conventional lease facilities.

Q What type of LACT installation is proposed here, Mr. Green?

A A positive displacement metering type.

Q The Commission has approved this type of installation in other fields in New Mexico, have they not?

A Yes, sir, that is correct.

Q In the brochure, have you stated some of those installations, giving the Order number?

A Yes, sir. I have.

Q All right, sir. Would you briefly explain, for the record, the equipment that will be installed and the flow pattern of the crude through the system to the pipeline?

A Yes, sir. By referring to Attachment 2 of Exhibit 2, we can follow the flow of the oil through the LACT system. The produced crude enters the tank battery, passes through the oil and gas separators, and then into the LACT surge tank. I might point out that between the oil and gas separators and the LACT surge tank, on the subject lease there, it being a single basic lease, commingling is not a problem. However, in the LACT units to be installed at storage systems 1, 2 and 3, commingling is required and advised. Lease production meters will be installed between the treating system and the LACT surge tank.

Q And that meter is reflected on the Attachment to the brochure for those particular installations, which are Exhibits 3, 4 and 5, in this hearing?

A Yes, sir, that is correct.

Q Will you go on, now, with your explanation?

A An oil level in the surge tank reaches the high level float switch (A), the pipeline pump, Item (C), is automatically started and the crude oil is then pumped through the LACT unit into the pipeline.

In order to assue delivery of merchantable oil to the pipeline at all times, a BS&W probe, identified as Item (E), is mounted downstream of transfer pump, Item (C). If oil delivered by the LACT unit exceeds 1% BS&W content, the BS&W monitor will cause the diverting valve, Item (F), to close the meter run and direct bad oil, unmerchantable oil into the recycling tank. When the BS&W content of the oil returns to a satisfactory range as determined by the BS&W monitor, the diverting valve, Item (F), will close to the recycling tank and again direct the reflow of oil to the LACT meter run. Merchantable oil passes through the strainer (G), the gas eliminator, Item (H), and on through the positive displacement meter, Item (I). After being metered, the oil is sampled at point (J), passes through the back pressure valve, Item (K), and flows on to the pipeline. The back pressure valve will be set at approximately 5 pounds per square inch to assure that a positive head is held across the P.D. meter and to prevent flow when the transfer pump is not operating. The meter prover tank, identified as Item (L), is located downstream of the back pressure valve. When sufficient oil has been transferred to the pipeline to lower the

fluid level in the surge tank to the low lever float switch, Item (B), the pipeline pump is automatically stopped. When lease production again fills the surge tank up to the level of float switch (A) the automatic custody transfer cycle again commences.

Any unmerchantable oil which is collected in the recycling tank will be treated in the tank. After the oil is treated, water is drawn off from the tank bottom, the recycle pump, Item (N), returns the treated oil to the LACT unit surge tank.

Q While you are there, Mr. Green, actually, water production in the Empire-Abo Field is not anything of a problem, is it?

A No, sir. Only four or five wells in the entire field thus far produce any water, and they, on the average, will produce about two to two and a half barrels a day.

Q All right, sir. Go ahead.

A That completes my description of the flow through the unit.

Q Mr. Green, I would like to hear your opinion with respect to the accuracy and reliability of an LACT unit as Pan American is proposing under these three cases here today.

Q The type unit which Pan American proposes to install has been proven to be highly dependable and very accurate by a similar type, utilizing similar type equipment in numerous other locations.

Q Mr. Green, you've testified that this LACT installa-

tion, as proposed, will prevent physical and economic waste. What is your opinion with respect to the protection of the correlative rights of all parties of interest?

A Due to the dependability of the equipment which we propose to install, and the reliability of that equipment, we feel that all the parties involved will be properly protected.

Q In these brochures, which are our Exhibits 2, 3, 4 and 5, I believe you have also set out the brand name of the meter which we will probably install, is that not correct?

A That is correct, yes, sir.

Q And, again, that was in the interest of giving complete information -- detailed information,and you are not requesting that the order, if the Commission approves these applications, make any specific reference to any particular type meter?

A That is correct.

Q Do you have anything else you would like to add, Mr. Green?

A No, sir. I believe we've covered this.

MR. BUELL: At this time, Mr. Examiner, we offer formally our Exhibits 1 through 5 inclusive.

MR. NUTTER: Without objection, Pan American's Exhibits 1 through 5 will be entered.

MR. BUELL: That's all we have at this time.

MR. NUTTER: Anyone have any questions of Mr. Green?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Green, in the event that monitor (E) receives oil with a BS&W of more than 1%, three-way valve (F) diverts the flow from the meter run into the recycling tank, is that correct?

A That is correct, yes, sir.

Q Now, the valve at the bottom of the recycling tank is always open?

A No, sir, it will be normally closed.

Q The production -- any rejected production goes into that tank and stays there until the pumper comes on out and removes from it that tank and treats it?

A He treats it and then removes the oil from the tank.

Q Now, in the event that this recycling tank fills up, is there a valve (M) at the top that will shut down the lease?

A Yes, sir. That is correct.

Q That's a high level valve --

A That's a high level float switch which actuates shut-off valves on the lease production headers, and will shut off the entire lease.

Q How do these actually shut the lease in, at the header itself, or does pressure build up and shut in the valve on the wellhead?

A It will shut diaphragm-operated valves at the production headers. We are utilizing high pressure flow lines.

Q You are using high pressure flow lines?

A Yes sir.

MR. NUTTER: Any further questions of the witness? He may be excused.

(Witness excused)

MR. NUTTER: Does anyone have anything further they wish to offer in Cases 1771, 1772, and 1773?

MR. BUELL: We have nothing else, Mr. Examiner.

MR. NUTTER: If there is nothing further in these cases, we will take the cases under advisement and recess the hearing until nine o'clock tomorrow morning.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 24 day of October, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1771,1772,1773 heard by me on 9-30, 1959.

, Examiner
New Mexico Oil Conservation Commission

EXHIBIT

PAN AMERICAN PETROLEUM CORPORATION

LEASE AUTOMATIC CUSTODY TRANSFER INSTALLATION
STORAGE SYSTEM II - EMPIRE ABO POOL
EDDY COUNTY, NEW MEXICO

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING
SEPTEMBER 30, 1959

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CONTENTS

INTRODUCTION

Pan American Petroleum Corporation respectfully submits this exhibit in support of its request to the Oil Conservation Commission of the State of New Mexico for approval to install and operate lease automatic custody transfer facilities at Storage System II, Empire Abo Pool, Eddy County, New Mexico.

The proposed LACT unit will be located at the site of Storage System II, located in NW/4 SW/4 Section 2, T-18-S, R-27-E, Eddy County, New Mexico. This tank battery stores and the LACT until will handle oil produced from State Leases in NW/4 NW/4 (E-5461) of Section 2, S/2 NW/4 (B-7244-30) and NW/4 SW/4 (B-7244-30) and SE/ SW/4 (B-7244-30) of Section 2, NE/4 SW/4 (B-8814-12) of Section 2, SW/4 SE/4 (E-7833) of Section 2, T-18-S, R-27-E, Eddy County, New Mexico. Attachment No. 1 is a plat of these leases, the tank battery, and the connected wells.

Permission to commingle oil produced from the above described leases was granted by Order No. R-1292 which was entered by the Commission after hearing Case No. 1552.

Prior to commingling, Pan American will separately measure the production from each lease with corrosion-resistant type meters which will be maintained in such a manner as to insure accurate measurement of the produced oil at all times. The meters shall be checked for accuracy in accordance with the instructions of the Commission.

LACT unit operating data collected by Pan American and other companies shows that the installation of facilities to accurately record temperature corrected volumes and automatically transfer lease produced crude oil to pipeline custody will:

1. Conserve natural resources in the form of light hydrocarbons which are now being lost from produced

crude oil to the atmosphere during the gauging operation at which time accumulated light ends escape and others flash from the stored oil to the atmosphere.

2. Substantially reduce residence time of the treated crude in the storage tanks thereby lessening vapor losses by way of normal tank venting or breathing.
3. Conserve manpower and improve lease operation by substantially reducing the current tank battery attendance time which will in turn release lease operating personnel and pipeline personnel for performance of other duties.
4. Release more money for finding and developing additional oil reserves since LACT equipment requires less capital investment than equivalent conventional lease facilities.

LACT UNIT

Equipment

The positive displacement meter type LACT unit to be installed at Storage System II is basically the same as a number of LACT units already approved by the Oil Conservation Commission. Recently, the Commission granted approval of similar positive displacement meter type LACT units in the Artesia Field, Eddy County (Order No. R-1346), the South Vacuum Unit, Lea County (Order No. R-1327), and the Caprock-Queen Pool, Chaves County (Order No. R-1326).

The LACT unit which Pan American proposes to install will consist of a pipeline pump; a BS&W monitor to detect the presence of unmerchantable oil; a valve to divert unmerchantable oil back to the treating facilities; a strainer; an air eliminator; a temperature compensated corrosion resistant positive displacement meter equipped with counter-ticket printer, set-stop counter, and fail-safe safety shutdown switch; a proportional pipeline sampler; a back pressure valve to assure that the line to and from the meter is packed with oil at a pressure in excess of the vapor pressure of the metered fluid; a calibrated meter prover tank; a LACT unit control panel; and other fail-safe safety features.

Operation

Operation of the LACT system can be followed by reference to the LACT unit flow diagram, included as Attachment No. 2.

Production from each lease served by Storage System II enters the tank battery and passes through the respective lease separator or treater. The treated crude is then measured by individual lease production meters. From the lease meters the oil is collected and transferred to common storage in the LACT unit surge tank. When the oil level in the surge tank reaches the high level float switch (A), the pipeline pump (C) is automatically started and the crude oil is then pumped through the LACT unit into the pipeline.

In order to assure delivery of merchantable oil to the pipeline at all times, a BS&W probe (E) is mounted downstream of the pump (C). If oil delivered by the LACT unit exceeds 1% BS&W content, the BS&W monitor will cause the diverting valve (F) to close the meter run and direct all bad oil into the recycling tank. When the BS&W content of the

oil returns to a satisfactory range as determined by the BS&W monitor, the diverting valve (F) will close to the recycling tank and again direct the flow of oil to the LACT meter run. Merchantable oil passes through the strainer (G), the gas eliminator (H), and on through the positive displacement meter (I). The P.D. meter will be an A. O. Smith Model S-12 automatic temperature compensated, corrosion resistant meter equipped with fail-safe controls, counter-ticket printer and set-stop counter to allow the pumper to follow daily and monthly lease production. After being metered, the oil is sampled at point (J), passes through the back pressure valve (K), and flows on to the pipeline. The back pressure valve will be set at approximately 5 psi to assure that a positive head is held across the P.D. meter (I) and to prevent flow when the transfer pump (C) is not operating. The meter prover tank (L) is located downstream of the back pressure valve. When sufficient oil has been transferred to the pipeline to lower the fluid level in the surge tank to the low level float switch (B), the pipeline pump is automatically stopped. When lease production again fills the surge tank up to the level of float switch (A) the automatic custody transfer cycle again commences.

Any unmerchantable oil which is collected in the recycling tank will be treated in the tank. After the water is drawn off from the tank bottom, the recycle pump (N) will return the treated oil to the LACT unit surge tank. The volume of unmerchantable oil will be a very small percentage of the total lease produced volume as the wells on the leases served by this tank battery now produce little or no water.

Sampling

A composite representative sample of all oil delivered to the pipeline will be obtained by the sampler (J). The A. O. Smith P.D. meter

will be equipped with an electric impulse transmitter which will signal the electric pump driven sampler to extract a proportionate sample of each unit volume of oil passing through the meter. Collection of a composite sample will be accomplished in a vapor-proof container. The sample will be tested by the pipeline. Calibration of the BS&W monitor, if required, will be made on the basis of the analysis of the composite sample.

Meter Proving

The LACT unit P.D. meter will be proven to the satisfaction of the New Mexico Oil Conservation Commission, the pipeline company, and Pan American Petroleum Corporation. Meter proving tests will be witnessed by representatives of the pipeline and Pan American.

The meter will be proven against a fixed volume tank calibrated to the satisfaction of the pipeline and Pan American. The tank will be built to conform to the standards of API Code 1101. The inside surfaces of the tank will be plastic coated to prevent corrosion and the adherence of crude products to the vessel, thereby reducing to an absolute minimum meter proving errors introduced by such factors. Oil collected in the prover tank during the meter proving tests will flow out of the tank and into the pipeline by gravity.

Fail-Safe Features

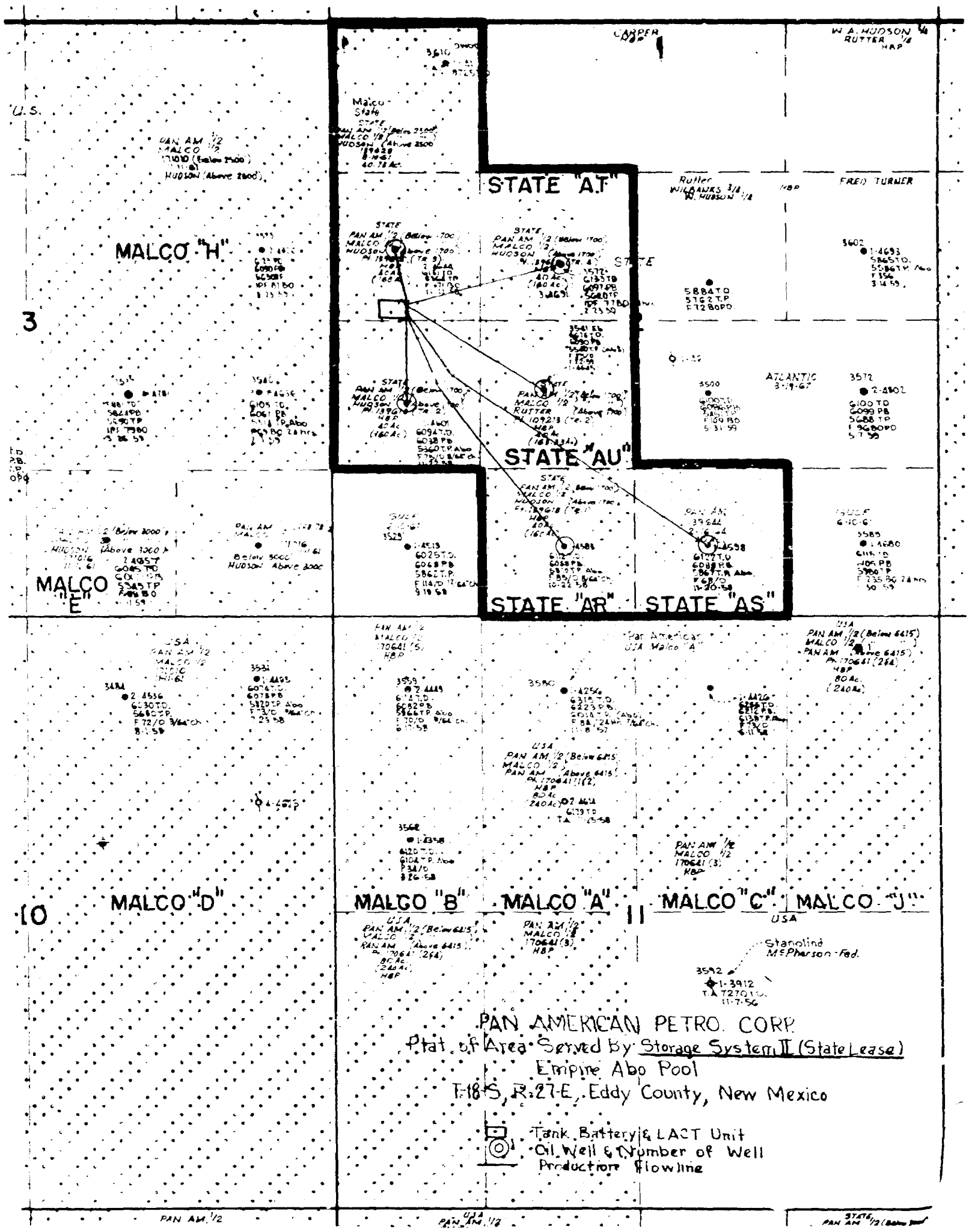
The LACT unit will be checked daily by a pumper. All operations are designed to be fail-safe for unattended operation as follows:

1. No oil can be run from the battery without passing through the LACT unit P.D. meter.

2. The P.D. meter will be equipped with a safety switch which will automatically de-energize the pipeline pump if the meter counter fails to operate or if the oil flow rate through the meter falls below a preset value.
3. In the event of failure of the low level float switch (B), a low pressure safety shutdown switch (D) will de-energize the pipeline pump, thereby preventing the lowering of the fluid level in the surge tank to the point that air or vapors would be drawn into the meter run.
4. In the event of failure of the high level float switch (A) the surge tank can overflow via an equalizing line into the recycle tank. If the recycle tank fills up to the level of float switch (M) all leases served by the battery will be automatically shutin. Combined storage will contain a minimum of one day's production. The battery and LACT unit will be checked daily by a pumper.
5. The P.D. meter will be equipped with set-stop controls to prevent over production.
6. The BS&W monitor performance will be automatically checked by the manual determination of sample BS&W content at the end of each month or during intervening periods as desired.
7. On electric power failure, transfer of oil to the pipeline will stop.

Tamper Proof Design

The P.D. meter cumulative barrels counter is non-resettable. The BS&W monitor controller and the LACT unit control panel will be locked to prevent tampering. The prover tank plug valves will be sealed at all times except during proving runs by authorized personnel.



PAN AMERICAN PETRO. CORP.

Plat of Area Served by Storage System II (State Lease)

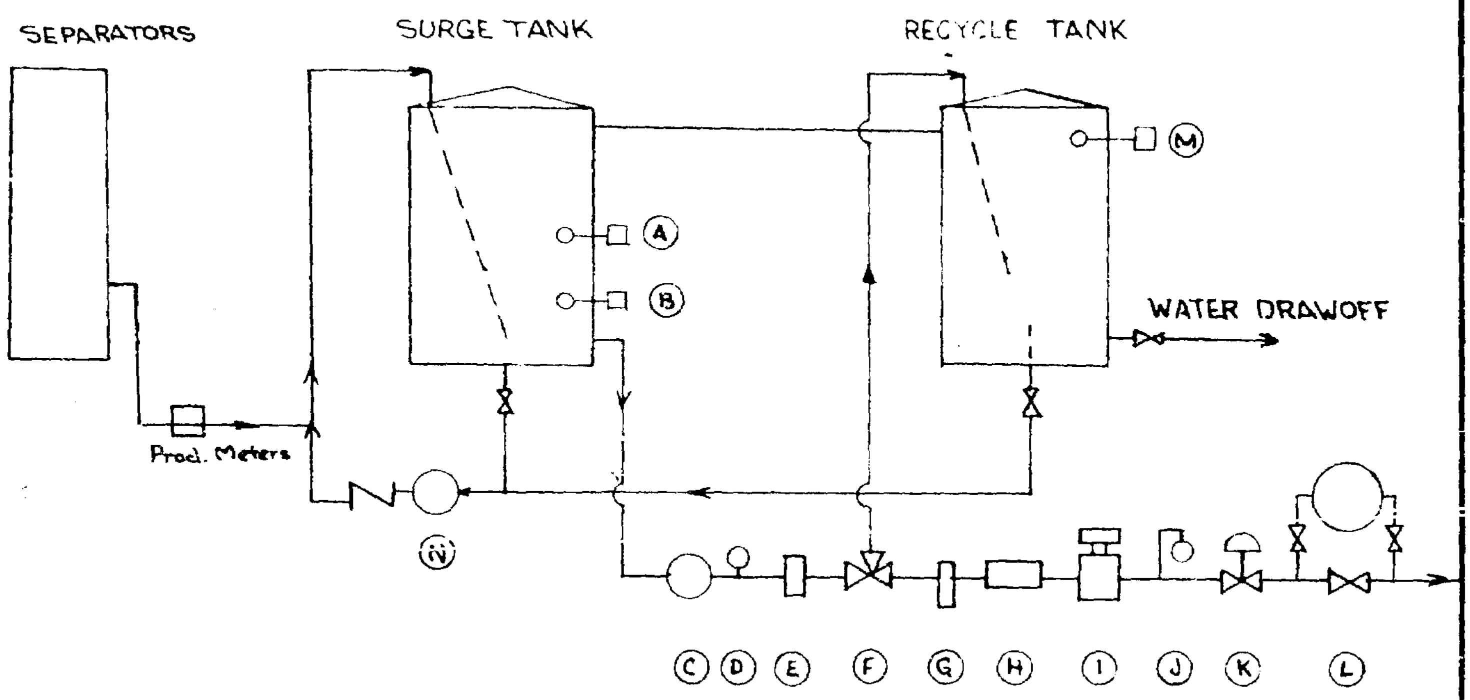
Empire Abo Pool

T-18-S, R-27-E, Eddy County, New Mexico

Tank Battery & LACT Unit

Oil Well & Number of Well

Production flowline



PAN AMERICAN PETROLEUM CORPORATION
P. D. METER LACT UNIT
STORAGE SYSTEM II (STATE LEASES)
EMPIRE ABO POOL
EDDY COUNTY, NEW MEXICO

BA1
34 072-AT2
48 027-AS1
59 86C-AU1
49 170-AT3
54 705-AR1
50 569-AT1

- A. **High Level Float Switch**
- B. **Low Level Float Switch**
- C. **Pipeline Pump**
- D. **Pressure Safety Shutdown Switch**
- E. **BS&W Monitor**
- F. **Bad Oil Diverting Valve**
- G. **Strainer**
- H. **Air Eliminator**
- I. **P.D. Meter**
- J. **Sampler**
- K. **Back Pressure Valve**
- L. **Prover Tank**
- M. **Lease Shutdown Switch**
- N. **Recycle Pump**

SERVICE PIPE LINE COMPANY

WEST TEXAS DIVISION

C. E. WILSON
DIVISION MANAGER

1628 19TH STREET
LUBBOCK, TEXAS

September 1, 1959

Automatic Custody Transfer Facilities - Empire Abo Field, Eddy County, New Mexico

Mr. Neil S. Whitmore
District Superintendent
Pan American Petroleum Corporation
P. O. Box 268
Lubbock, Texas

Dear Mr. Whitmore,

We have reviewed your plans for lease automatic custody transfer by meters in the Empire - Abo Field, Eddy County, New Mexico.

The facilities shown in these plans are satisfactory with Service Pipe Line Company, and we will accept custody of oil delivered by the proposed LACT units in lieu of conventional manual gauging.

Yours very truly,

SERVICE PIPE LINE COMPANY

Charles E. Wilson

Charles E. Wilson
Division Manager

tm

PAN AMERICAN PETROLEUM CORPORATION

P. O. Box 268
Lubbock, Texas
August 26, 1959

File: CDP-3269-542.713

Subject: Installation of Lease Automatic Custody Transfer Facilities - Empire Abo Field, Eddy County, New Mexico

Mr. Murray E. Morgan
Commissioner of Public Lands
State Land Office
Santa Fe, New Mexico

Dear Sir:

As you are aware, the New Mexico Oil Conservation Commission, as the result of hearing Case No. 1592, entered Order No. R-1292 granting Pan American Petroleum Corporation permission to commingle Empire Abo Pool production from four separate State Leases into common storage located in Section 2, T-18-S, R-27-E, Eddy County, New Mexico.

In order to further improve the efficiency of lease operations we are planning to install lease automatic custody transfer equipment to serve the above mentioned leases. Location of the LACT unit is to be the above mentioned tank battery site in Section 2.

We respectfully request your approval of these plans and ask that you so indicate by signing in the space provided below and returning one copy of this letter to the undersigned.

Yours very truly,

Neil B. Whitmore
District Superintendent

ARG: js

APPROVED BY COMMISSIONER OF PUBLIC LANDS
MURRAY E. MORGAN

DATE 8/28/59