

ERCO PETROLEUM SERVICES, INC.
Petroleum Laboratories

CORE ANALYSIS REPORT

FOR

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
O.C.D.
HOBBS OFFICE



PETROLEUM
SERVICES, INC.

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

CONVENTIONAL PLUG AND WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
CORE NO. 1 4117.0-4177.0 CUT 60' REC 60'								
4117.0-18.0								SH GY DOL MICA NO FLU
4118.0-19.0								SH GY DOL MICA NO FLU
4119.0-20.0								SH GY DOL MICA NO FLU
4120.0-21.0								DOL VFXLN GYP BO ORNG FLU
4121.0-22.0								DOL VFXLN SM ANHY SPT BO ORNG FLU
4122.0-23.0								DOL VFXLN SM ANHY SPT BO ORNG FLU
4123.0-24.0								DOL VFXLN GYP S/P SCAT SHY SPT FLU
4124.0-25.0								DOL VFXLN GY SH MICA HFRAC NO FLU
4125.0-26.0								DOL VFXLN SD VFG HD SM ANHY HFRAC SPT FLU
4126.0-27.0								SD VFG DOL SCAT SH HFRAC TR FLU
4127.0-28.0								SD VFG DOL SCAT SH HFRAC TR FLU
4128.0-29.0								SD VFG DOL HD GY SH TR BO TR FLU
4129.0-30.0								SD VFG DOL HD THN LAM GY SH TR FLU
4130.0-31.0								DOL VFXLN SDY THN LAM BRN/GRY SH TR FLU
4131.0-32.0								DOL VFXLN SSDY PPP SM ANHY SPT FLU
4132.0-33.0								DOL VFXLN SM ANHY HFRAC S/P GYP SPT BO SPT FLU
4133.0-34.0								DOL VFXLN SM ANHY GY S/P NO FLU
4134.0-35.0								DOL VFXLN SM ANHY GY S/P NO FLU
4135.0-36.0								DOL VFXLN DK BRN SM ANHY/GYP HFRAC SCAT PPP SCAT FL
4136.0-37.0								DOL VFXLN DK ERN SM ANHY/GYP VFRAC SPT FLU
4137.0-38.0								DOL VFXLN DK BRN THN GY S/P NO FLU
4138.0-39.0								DOL VFXLN GY VFRAC BO SPT FLU
4139.0-40.0								DOL VFXLN GY S/P NO FLU
4140.0-41.0								DOL VFXLN GY DNS GY S/P SPT BO NO FLU
4141.0-42.0								DOL VFXLN GY DNS GY S/P SPT BO NO FLU
4142.0-43.0								DOL VXLN GY DNS GYP NO FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
O.C.D.
HOBBS OFFICE



PETROLEUM
SERVICES INC

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

CONVENTIONAL PLUG AND WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
4143.0-44.0								DOL VXLN GY DNS NO FLU
4144.0-45.0								DOL VXLN GY DNS SCAT GY S/P NO FLU
4145.0-46.0								DOL FXLN GY DNS SCAT GY S/P NO FLU
4146.0-47.0								DOL MICXL LT GY SCAT GY S/P NO FLU
4147.0-48.0								DOL FXLN BRN GYP PPP SCAT B0 TR FLU
4148.0-49.0								DOL FXLN BRN GYP SM ANHY NO FLU
4149.0-50.0								DOL FXLN BRN GYP SM ANHY NO FLU
4150.0-51.0								DOL FXLN GY SM ANHY SCAT GY S/P NO FLU
4151.0-52.0								DOL FXLN BRN HFRAC B0 SPT FLU
4152.0-53.0								DOL FXLN BRN HFRAC B0 SPT FLU
4153.0-54.0								DOL FXLN BRN HFRAC B0 SPT FLU
4154.0-55.0								DOL VFXLN GY SCAT GY S/P MICA NO FLU
4155.0-56.0								DOL VFXLN GY SCAT GY S/P MICA NO FLU
4156.0-57.0								DOL VFXLN GY SCAT GY S/P SM ANHY NO FLU
4157.0-58.0								DOL VFXLN GY SCAT GY S/P MICA HFRAC TR FLU
4158.0-59.0								DOL VFXLN GY SCAT GY S/P MICA HFRAC TR FLU
4159.0-60.0								DOL VFXLN GY SSDY THN LAM GY SH NO FLU
4160.0-61.0								DOL VFXLN GY SSDY THN LAM GY SH NO FLU
4161.0-62.0								DOL VFXLN TN SM ANHY SPT PPP B0 ORNG FLU
4162.0-63.0								DOL VFXLN TN SM ANHY SPT PPP B0 ORNG FLU
4163.0-64.0								DOL VFXLN TN SM ANHY SPT PPP B0 ORNG FLU
4164.0-65.0								DOL VFXLN GY SCAT SDY SCAT GY SH NO FLU
4164.0-66.0	0.09		1.5				2.82	DOL VFXLN BRN SCAT B0 HFRAC ORNG FLU
4166.0-67.0	0.12		2.5				2.82	DOL VFXLN BRN SCAT B0 HFRAC ORNG FLU
4167.0-68.0	0.23		4.1				2.71	SD VFG DOL BRN HD SCAT ORNG FLU
4168.0-69.0	0.22		3.7				2.71	SD VFG DOL BRN HD SCAT ORNG FLU
4169.0-70.0	0.25		3.7				2.72	SD VFG DOL BRN HD SCAT ORNG FLU
4170.0-71.0	0.27		2.7				2.74	SD VFG DOL BRN HD SCAT ANHY SCAT ORNG FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

CONVENTIONAL PLUG AND WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
	4195.0-96.0							DOL MXLN GY GYP SCAT BLK S/P NO FLU
	4196.0-97.0							DOL VFXLN GY HFRAC FD SH NO FLU
	4197.0-98.0							DOL VFXLN GY SCAT SLTY SHY ANHY/GYP NO FLU
	4198.0-99.0							DOL VFG SDY GY SCAT GY SH NO FLU
	4199.0-4200.0							DOL SLTY SHY GY GY SH NO FLU
	4200.0-01.0							DOL SLTY SHY GY GY SH NO FLU
	4201.0-02.0							DOL VFXLN BRN ANHY/GYP SCAT GY SH BO TR FLU
	4202.0-03.0							DOL VFXLN BRN ANHY/GYP SCAT BO ORNG FLU
	4203.0-04.0							DOL VFXLN BRN ANHY/GYP SCAT BO ORNG FLU
	4204.0-05.0							DOL SLTY SHY GY GY S/P NO FLU
	4205.0-06.0							DOL SLTY SHY GY GY S/P NO FLU
	4206.0-07.0							DOL MICXL GY LG ANHY NOD NO FLU
	4207.0-08.0							DOL MICXL GY SCAT S/P ANHY FD FRACS NO FLU
	4208.0-09.0							DOL MICXL GY SCAT S/P SM ANHY NO FLU
	4209.0-10.0							DOL MICXL GY SCAT GY/BLK SH NO FLU
	4210.0-11.0							DOL MICXL GY SCAT GY/BLK S/P SM ANHY NO FLU
	4211.0-12.0							DOL MICXL GY SCAT GY BLK S/P SM ANHY NO FLU
	4212.0-13.0							DOL VFXLN GY SCAT SLTY SHY SCAT S/P NO FLU
	4213.0-14.0							DOL VFXLN GY SCAT SLTY SHY SCAT S/P NO FLU
	4214.0-15.0							DOL VFXLN GY VSCAT PPP BO SCAT GY S/P SCAT FLU
	4215.0-16.0							DOL VFXLN SSLTY GY SCAT PPP ORNG FLU
	4216.0-17.0							DOL VFXLN SSLTY GY PPP EO ORNG FLU
	4217.0-18.0							DOL VFXLN GY ANHY FD FRACS SPT PPP SPT FLU
	4218.0-19.0							DOL VFXLN GY SCAT ANHY/GYP SPT PPP SPT ORNG FLU
	4219.0-20.0							DOL VFXLN GY SCAT ANHY/GYP SM HFRACS GY S/P NO FLU
	4220.0-21.0							DOL MICXL GY H/V FRACS NO FLU
	4221.0-22.0							DOL MICXL GY H/V FRACS VSCAT PPP BO ORNG FLU
	4222.0-23.0							DOL MICXL GY HFRACS SCAT BO ORNG FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

CONVENTIONAL PLUG AND WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
	4223.0-24.0							DOL VFXLN GY SSDY VSCAT B0 CALC CEM TR GLD FLU
	4224.0-25.0							DOL VFXLN GY SSDY SCAT SLTY TR GYP TR GLD FLU
	4225.0-26.0	0.19		4.6			2.74	SD VFG DOL DNS HD GLD FLU
	4226.0-27.0	0.47		7.5			2.68	SD VFG DOL DNS HD GLD FLU
	4227.0-28.0	0.35		6.5			2.68	SD VFG DOL DNS HD GLD FLU
	4228.0-29.0	0.24		4.4			2.72	SD VFG DOL DNS HD GLD FLU
	4229.0-30.0							DOL VFXLN GY SM HFRACS SPT B0 SCAT SLTY SH ORNG FLU
	4230.0-31.0							DOL MICXL GY SCAT SM GY S/P TR FLU
	4231.0-32.0							DOL MICXL GY SCAT PPP B0 LG GY S/P SM HFRACS TR FLU
	4232.0-33.0							DOL VFXLN GY SCAT VUG SCAT PPP B0 FLK S/P ORNG FLU
	4233.0-34.0							DOL MICXL DK GY SCAT VUG TO PP B0 SM HFRACS ORNG FL
	4234.0-35.0							DOL VFXLN GY SCAT GY S/P NO FLU
	4235.0-36.0							DOL VFXLN BRN SM ANHY SCAT SLTY SHY GY S/P GLD FLU
	4236.0-37.0							DOL VFXLN BRN SM ANHY PPP B0 GLD FLU
CORE NO. 3 4237.0-4262.0 CUT 25' REC 25'								
	4237.0-38.0							DOL FXLN GY PPP B0 GY/BLK SP 20% ORNG FLU
	4238.0-39.0							DOL VFXLN GY THN S/P 5% ORNG FLU
	4239.0-40.0							DOL VFXLN GY SCAT SLTY SHY SCAT THN GY S/P TR B0 ORNG FLU
	4240.0-41.0							DOL MICXL GY SM ANHY LG BLK S/P TR B0 ORNG FLU
	4241.0-42.0							DOL VFXLN GY THN GY SH STRY NO FLU
	4242.0-43.0							DOL VFXLN GY THN GY SH STRY NO FLU
	4243.0-44.0							DOL MICXL GY THN S/P TR B0 TR ORNG FLU
1	4244.0-45.0	0.10		1.4			2.87	DOL OOL TN TR GYP SPT PPP B0 VTFRAC GLD FLU
2	4245.0-46.0	0.13		3.1			2.84	DOL OOL TN SH STY'S SPT PPP GLD FLU
3	4246.0-47.0	0.15		2.9			2.86	DOL OOL TN SH STY'S SPT PPP VTFRACS GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
FEDERAL
Housing Office



PETROLEUM
SERVICES, INC.

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

CONVENTIONAL PLUG AND WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION

4	4247.0-48.0							DOL FXLN SCAT DOL TN CALC CEM SCAT GLD FLU
	4248.0-49.0							DOL FXLN TN SSDY SH STY SCAT PPP SM VTFRAC GLD FLU
	4249.0-50.0	0.10		1.1			2.88	DOL DOL TN DOL VFXLN TN SCAT PPP SH STY GLD FLU
	4250.0-51.0							DOL VFXLN TN VSCAT PPP TR GLD FLU
5	4251.0-52.0							DOL DOL TN SPT PPP THN SH STY SPT GLD FLU
	4252.0-53.0	0.18		5.3			2.85	DOL DOL SSDY TN SAT PPP SH STY SPT GLD FLU
	4253.0-54.0							DOL OOL TN SH STY SPT PPP SPT GLD FLU
	4254.0-55.0							DOL OOL TN SH STY VTFRAC SPT PPP SAT GLD FLU
6	4255.0-56.0							DOL OOL SSDY TN SPT PPP VTFRAC SPT GLD FLU
	4256.0-57.0	0.12		3.4			2.86	DOL OOL SSDY TN SM SD INC SPT PPP STY GLD FLU
	4257.0-58.0							DOL FXLN SSDY TN HFRACS SCAT SLTY SHY SCAT PPP SPT GLD FLU
	4258.0-59.0							DOL FXLN SSDY TN PPP BO THN S/P SPT GLD FLU
	4259.0-60.0							DOL VFXLN SSDY TN PPP SH STY GLD FLU
	4260.0-61.0							DOL VFXLN GY SM VTFRAC SPT PPP BO SPT GLD FLU
	4261.0-62.0							DOL MICXL GY H/VTFRAC SH STY TR BO TR ORNG FLU
CORE NO. 4 4262.0-4297.0 CUT 35' REC 35'								
7	4262.0-63.0							DOL OOL TO VFXLN BF FRAC PA GLD FLU
	4263.0-64.0							DOL VFXLN GY SM FRACS SM ANHY SPT GLD FLU
	4264.0-65.0							DOL OOL BF SPT PPP BO SPT GLD FLU
	4265.0-66.0	3.00	2.60	6.6	7.2	36.0	2.85	DOL OOL BF SPT PPP BO SPT GLD FLU
8	4266.0-67.0							DOL OOL BF PPP SM ANHY GLD FLU
	4267.0-68.0	3.20	3.20	5.5	1.4	33.7	2.84	DOL OOL BF PPP SM ANHY GLD FLU
	4268.0-69.0							DOL OOL BF PPP SM ANHY GLD FLU
	4269.0-70.0							DOL OOL BF PPP SCAT ANHY SH STY GLD FLU
	4270.0-71.0							DOL OOL BF PPP SM ANHY SH STY GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
OCS
HOBBS OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
9	4271.0-72.0							DOL OOL BF PPP BLK GILSONITE SPT GLD FLU
	4272.0-73.0							DOL OOL BF PPP GILSONITE SPT GLD FLU
	4273.0-74.0							DOL OOL BF PPP GILSONITE SPT BO NO FLU
	4274.0-75.0							DOL MXLN GY THN' GY S/P TR BO SPT ORNG FLU
	4275.0-76.0							DOL VFXLN SDY GY SCAT SHY GY S/P PA GLD FLU
	4276.0-77.0							SD VFG DOL TN SM ANHY PA GLD FLU
	4277.0-78.0							SD VFG DOL TN SM ANHY PA GLD FLU
	4278.0-79.0							SD VFG DOL TN SM ANHY PA GLD FLU
	4279.0-80.0							DOL VXLN GY SSDY SCAT BLK S/P NO FLU
	4280.0-81.0							DOL FXLN GY SCAT SLTY SHY SCAT BLK S/P NO FLU
10	4281.0-82.0							SD VFG DOL GY SCAT S/P TR BO TR FLU
	4282.0-83.0							DOL VFXLN GY SCAT SM ANHY/GYP SPT BO SPT PA GLD FLU
	4283.0-84.0							DOL CRPXY GY VUG BO DOL XL IN VUG DOL VFXLN GY SCAT FLU
	4284.0-85.0							DOL CRPXY GY VUG BO DOL XL IN VUG VTFRAC ORNG FLU
	4285.0-86.0	2.90	2.20	3.9	12.8	43.8	2.85	DOL CRPXY GY VUG/PP SCAT ANHY ANHY FD FRACS GLD FLU
	4286.0-87.0							DOL CRPXY GY VUG/PP SCAT ANHY ANHY FD FRACS GLD FLU
	4287.0-88.0							DOL CRPXY GY VUG/PP SCAT ANHY ANHY FD FRACS FLD FLU
	4288.0-89.0							DOL CRPXY GY VUG/PP DOL SLTY SHY GY SH STY SCAT ANHY GLD FLU
	4289.0-90.0							DOL CRPXY GY SCAT VUG H/VTFRACS SPT GLD FLU
	4290.0-91.0	0.60	0.01	0.7	10.1	53.2	2.83	DOL CRPXY GY LG ANHY VTFRAC SCAT VUG GLD FLU
11	4291.0-92.0							DOL CRPXY DK GY VSCAT VUG ANHY SCAT S/P TR PA FLU
12	4292.0-93.0	0.05	0.03	1.1	10.0	62.0	2.87	DOL CRPXY DK GY VSCAT VUG ANHY HFRACS SCAT BO SCAT PA GLD FLU
	4293.0-94.0							DOL CRPXY DK GY VSCAT VUG H/VTFRAC ANHY PA GLD FLU
	4294.0-95.0							ANHY BKN FRAC NO FLU
	4295.0-96.0							LOST CORE

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG: FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
		CORE NO. 5 4297.0-4323.0 CUT 26' REC 26'						
13	4297.0-98.0							DOL VFXLN BF LG ANHY SCAT PPP BO GLD FLU
	4298.0-99.0							DOL VFXLN BF SSDY SCAT ANHY SPT PPP BO GLD FLU
	4299.0-4300.0	3.80	1.60	4.6	15.2	32.5	2.84	DOL VFXLN BF SSDY SCAT ANHY PPP BO ANHY FD FRACS GLD FLU
14	4300.0-01.0							DOL VFXLN BF HFRACS PPP BO LG ANHY GLD FLU
	4301.0-02.0							DOL VFXLN BF FTRACS PPP BO SCAT ANHY SH STY GLD FLU
	4302.0-03.0	0.03	0.03	3.7	15.6	30.2	2.83	DOL MICXL GY VUG BO FRACS GLD FLU
15	4303.0-04.0							DOL MICXL GY VUG BO SCAT SLTY SHY GLD FLU
	4304.0-05.0							DOL MICXL GY VUG BO ANHY H/VTFRACS GLD FLU
	4305.0-06.0	0.12	0.01	1.7	8.5	73.3	2.85	DOL MICXL GY VUG BO ANHY H/VTFRACS GLD FLU
	4306.0-07.0							DOL MICXL BF PP TO VUG ANHY ANHY FD FRACS SCAT BO GLD FLU
16	4307.0-08.0							DOL VFXLN BF VTFRACS BO SM ANHY TR FLU
	4308.0-09.0							DOL VFXLN LT GY PPP SM ANHY FRACS GLD FLU
	4309.0-10.0							DOL VFXLN GY/BF PPP S/P ANHY SCAT BO GLD FLU
17	4310.0-11.0	0.90	0.60	7.4	6.7	44.4	2.83	DOL VFXLN GY PPP ANHY FD FRACS GLD FLU
	4311.0-12.0							DOL VFXLN GY SSDY PPP ANHY SH STY TR FLU
	4312.0-13.0							DOL VFXLN BF SSUC PPP SM ANHY GLD FLU
18	4313.0-14.0	11.20	0.90	10.2	7.4	47.1	2.79	DOL VFXLN BF SSUC PPP SM ANHY GLD FLU
	4314.0-15.0							DOL VFXLN GY PPP VTFRAC SM ANHY GLD FLU
	4315.0-16.0	2.30	0.60	9.2	28.6	38.8	2.80	DOL VFXLN BF SSUC PPP SM ANHY GLD FLU
19	4316.0-17.0							DOL SUC BRN PPP SM ANHY SH STY GLD FLU
	4317.0-18.0	39.00	11.30	6.7	17.8	42.5	2.76	DOL SUC BRN PPP SM ANHY SCAT S/P GLD FLU
	4318.0-19.0							DOL SUC BRN PPP SM ANHY VTFRAC GLD FLU
20	4319.0-20.0	34.00	31.00	14.7	21.2	31.4	2.82	DOL SUC BRN PPP SM ANHY GLD FLU
	4320.0-21.0							DOL SUC BRN PPP SM ANHY GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
O.C.D.
HOBBS OFFICE



PETROLEUM
SERVICES, INC.

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
21	4321.0-22.0	11.00	4.00	11.8	12.0	40.8	2.84	DOL SUC BRN PPP SCAT ANHY GLD FLU
22	4322.0-23.0	120.00	53.00	15.4	24.1	31.1	2.79	DOL SUC BRN PPP SCAT ANHY GLD FLU
CORE NO. 6 4323.0-4383.0 CUT 60' REC 60'								
23	4323.0-24.0	0.81	PLUG	11.3	26.1	40.1	2.80	DOL FXLN TO SUC SM ANHY/GYP VTFRAC YL FLU
24	4324.0-25.0	0.28	PLUG	9.6	29.1	41.6	2.85	DOL FXLN TO SUC SM ANHY/GYP BKN FRAC YL FLU
25	4325.0-26.0	29.00	27.00	12.0	22.7	40.0	2.83	DOL FXLN TO SUC ANHY/GYP VTFRAC YL FLU
26	4326.0-27.0	23.00	3.60	11.5	21.1	38.2	2.83	DOL FXLN TO SUC ANHY/GYP FOSS VTFRAC YL FLU
27	4327.0-28.0	26.00	24.00	14.2	24.6	36.6	2.82	DOL FXLN TO SUC ANHY/GYP FOSS VTFRAC YL FLU
28	4328.0-29.0	30.00	24.00	14.5	31.1	44.8	2.80	DOL FXLN TO SUC ANHY/GYP FOSS YL FLU
29	4329.0-30.0	31.00	16.00	9.8	30.3	38.9	2.82	DOL FXLN TO SUC ANHY/GYP FOSS VTFRAC YL FLU
30	4330.0-31.0	15.00	11.30	11.8	38.0	36.9	2.83	DOL FXLN TO SUC ANHY/GYP VTFRAC YL FLU
31	4331.0-32.0	16.30	13.60	11.9	41.3	39.5	2.83	DOL FXLN TO SUC ANHY/GYP VTFRAC YL FLU
32	4332.0-33.0	0.23	PLUG	15.2	29.9	43.1	2.82	DOL FXLN TO SUC ANHY/GYP VTFRAC YL FLU
33	4333.0-34.0	13.00	9.00	11.3	37.5	41.2	2.83	DOL SUC CLN PPP YL FLU
34	4334.0-35.0	20.00	16.30	11.9	25.5	35.6	2.84	DOL SUC CLN PPP YL FLU
35	4335.0-36.0	29.00	20.00	12.1	27.4	43.0	2.84	DOL SUC CLN PPP YL FLU
36	4336.0-37.0	30.00	22.00	12.9	29.6	38.7	2.84	DOL SUC CLN PPP SM ANHY YL FLU
37	4337.0-38.0	39.00	39.00	16.3	28.7	41.0	2.81	DOL SUC CLN PPP SM ANHY YL FLU
38	4338.0-39.0	0.26	PLUG	15.6	31.8	41.2	2.81	DOL SUC CLN PPP SM ANHY VTFRAC YL FLU
39	4339.0-40.0	0.40	PLUG	16.1	34.0	41.0	2.79	DOL SUC CLN PPP SM ANHY VTFRAC YL FLU
40	4340.0-41.0	26.00	5.20	9.2	21.5	35.0	2.86	DOL SUC CLN PPP SM ANHY VTFRAC YL FLU
41	4341.0-42.0	0.48	PLUG	16.9	17.2	34.6	2.84	DOL SUC CLN PFP LG ANHY YL FLU
42	4342.0-43.0	33.00	32.00	16.2	26.2	43.4	2.82	DOL SUC CLN PPF ANHY FD FRAC VTFRAC YL FLU
43	4343.0-44.0	23.00	21.00	11.4	27.5	36.6	2.80	DOL SUC CLN PPP SM ANHY YL FLU
44	4344.0-45.0	0.05	PLUG	9.9	25.1	39.3	2.83	DOL SUC CLN PPP SM ANHY VTFRAC YL FLU
45	4345.0-46.0	7.30	6.00	10.9	18.3	36.2	2.83	DOL SUC CLN PPP SM ANHY VTFRAC YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PETROLEUM
SERVICES, INC.

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG: FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
					PORE	---	PORE	---	DENS	---	
46	4346.0-47.0	11.50	10.00	11.3	16.0	---	39.9	---	2.82	---	DOL VFXLN TO SUC SM ANHY/GYP YL FLU
47	4347.0-48.0	11.00	6.00	14.4	15.0	---	38.0	---	2.83	---	DOL VFXLN TO SUC SM ANHY YL FLU
48	4348.0-49.0	23.00	18.00	13.8	25.4	---	32.3	---	2.84	---	DOL VFXLN TO SUC LG ANHY INC YL FLU
49	4349.0-50.0	61.00	55.00	22.0	10.5	---	37.3	---	2.80	---	DOL SUC TO SDY SM ANHY YL FLU
50	4350.0-51.0	34.00	31.00	18.1	14.7	---	34.5	---	2.81	---	DOL SUC SM ANHY/GYP YL FLU
51	4351.0-52.0	1.50	1.40	9.2	7.7	---	42.6	---	2.85	---	DOL VFXLN TO SUC ANHY/GYP YL FLU
52	4352.0-53.0	3.00	2.00	9.3	23.3	---	38.2	---	2.82	---	DOL VFXLN TO SUC VUG TO PP ANHY/GYP YL FLU
53	4353.0-54.0	2.30	1.50	6.1	29.4	---	32.1	---	2.86	---	DOL VFXLN TO SUC VUG TO PP ANHY/GYP YL FLU
54	4354.0-55.0	5.70	4.70	8.4	25.0	---	34.1	---	2.84	---	DOL VFXLN TO SUC VUG TO PP ANHY/GYP YL FLU
55	4355.0-56.0	17.00	9.20	8.6	12.9	---	42.3	---	2.84	---	DOL VFXLN TO SUC VUG TO PP ANHY/GYP YL FLU
56	4356.0-57.0	46.00	3.70	5.8	16.4	---	40.1	---	2.85	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
57	4357.0-58.0	10.00	10.00	7.1	22.8	---	37.5	---	2.83	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
58	4358.0-59.0	0.65	0.50	2.8	25.4	---	38.1	---	2.86	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
59	4359.0-60.0	0.63	0.46	2.8	20.1	---	41.6	---	2.86	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
60	4360.0-61.0	48.00	0.38	2.3	20.8	---	48.7	---	2.86	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
61	4361.0-62.0	0.80	0.71	3.7	25.1	---	44.2	---	2.86	---	DOL VFXLN TO SUC PPP ANHY/GYP YL FLU
62	4362.0-63.0	0.88	0.62	3.3	22.8	---	35.6	---	2.86	---	DOL FXLN BF PPP SCAT ANHY YL FLU
63	4363.0-64.0	75.00	1.30	2.8	18.5	---	46.4	---	2.86	---	DOL FXLN BF PPP SCAT ANHY YL FLU
64	4364.0-65.0	6.80	2.40	5.0	24.5	---	41.4	---	2.86	---	DOL FXLN BF PPP SCAT ANHY YL FLU
65	4365.0-66.0	25.00	15.00	8.2	22.6	---	33.8	---	2.84	---	DOL FXLN GY PPP SCAT ANHY YL FLU
66	4366.0-67.0	2.52	PLUG	10.1	27.3	---	36.1	---	2.81	---	DOL VFXLN GY VTRAC SM ANHY SPT GLD FLU
67	4367.0-68.0	0.05	PLUG	3.3	21.7	---	40.3	---	2.86	---	DOL VFXLN GY ANHY FD FRACS SPTY B0 SPTY FLU
68	4368.0-69.0	0.79	PLUG	6.6	20.2	---	50.2	---	2.82	---	DOL VFXLN GY FRACS ANHY FD FRACS SPT GLD FLU
69	4369.0-70.0	18.00	0.31	4.2	21.0	---	66.6	---	2.83	---	DOL VFXLN GY SH FD FRACS SPT YL FLU
70	4370.0-71.0	6.10	5.70	3.8	19.3	---	58.4	---	2.84	---	DOL VFXLN GY SH FD FRACS SPT YL FLU
71	4371.0-72.0	7.70	7.40	10.7	25.0	---	35.5	---	2.79	---	DOL VFXLN SCAT PP SM ANHY SPT YL FLU
72	4372.0-73.0	2.90	1.14	7.8	25.6	---	38.7	---	2.79	---	DOL VFXLN SCAT PP SM ANHY SPT YL FLU
73	4373.0-74.0	0.07	PLUG	3.6	22.9	---	48.9	---	2.85	---	DOL VFXLN SCAT PP SM ANHY SPT YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
O.C.D.
HOBBS OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO. 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ PERM MD		POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
		MAX	90°		PORE	PORE	PORE	PORE	DENS	DENS	
74	4374.0-75.0	0.05	PLUG	8.4	27.9	34.6			2.82		DOL VFXLN SM FRACS SCAT SM ANHY SPT YL FLU
75	4375.0-76.0	0.98	0.43	4.0	21.0	36.8			2.85		DOL VFXLN ANHY/GYP FRACS SPT YL FLU
76	4376.0-77.0	0.29	0.07	1.3	17.6	45.6			2.83		DOL VFXLN ANHY/GYP FRACS SPT YL FLU
77	4377.0-78.0	0.37	0.34	1.9	10.1	52.2			2.86		DOL VFXLN ANHY/GYP FRACS SPT YL FLU
78	4378.0-79.0	1.63	PLUG	6.0	10.8	42.3			2.81		DOL VFXLN ANHY/GYP FRACS SPT YL FLU
79	4379.0-80.0	0.36	0.12	2.4	2.4	57.7			2.85		DOL FXLN SM ANHY/GYP SPT B0 SPT YL FLU
80	4380.0-81.0	0.15	0.06	1.3	8.5	69.0			2.85		DOL VFXLN LG ANHY SCAT SLTY SPT YL FLU
81	4381.0-82.0	0.02	PLUG	1.1	10.1	67.5			2.84		DOL VFXLN SCAT SLTY SHY LG ANHY SCAT YL FLU
82	4382.0-83.0	0.01	PLUG	0.7	1.6	59.2			2.85		DOL VFXLN ANHY FD FRACS VTFRAC TR FLU

CORE NO. 7 4383.0-4426.0 CUT 43' REC 42'

4383.0-84.0	DOL VFXLN GY LG ANHY INC SM FRACS NO FLU
4384.0-85.0	DOL VFXLN GY LG ANHY INC SH FRACS TR DK FLU
4385.0-86.0	DOL VFXLN GY SM ANHY DK B0 SPT PPP DK FLU
4386.0-87.0	DOL VFXLN GY SM ANHY ANHY FD FRACS NO FLU
4387.0-88.0	DOL MICXL GY ANHY FD FRACS NO FLU
4388.0-89.0	DOL MICXL GY ANHY FD FRACS TR B0 NO FLU
4389.0-90.0	DOL MICXL GY GY/BLK S/P ANHY FD FRACS DK B0 NO FLU
4390.0-91.0	DOL MICXL GY GY/BLK S/P SM ANHY TR B0 NO FLU
4391.0-92.0	DOL SM OOL GY NO FLU
4392.0-93.0	DOL SM OOL GY NO FLU
4393.0-94.0	DOL MICXL SCAT SM OOL BLK S/P NO FLU
4394.0-95.0	DOL VFXLN GY LG ANHY INC SCAT S/P SCAT B0 DK GLD FLU
4395.0-96.0	DOL FXLN BF PPP OSTN DK GLD FLU
4396.0-97.0	DOL FXLN BF PPP OSTN DK GLD FLU
4397.0-98.0	DOL VFXLN BF SCAT B0 SCAT PPP DK GLD FLU
4398.0-99.0	DOL VFXLN BF VSCAT B0 SM FRACS TR GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1933
C.C.D.
HOBBS OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
					PORE	PORE	PORE	PORE	DENS	DENS	
	4399.0-4400.0										DOL MICXL BF TR BO NO FLU
	4400.0-01.0										DOL MICXL BF SM ANHY/GYP SCAT S/P NO FLU
	4401.0-02.0										DOL MICXL BF SM ANHY/GYP SCAT S/P NO FLU
	4402.0-03.0										DOL MICXL BF LG ANHY INC SCAT S/P NO FLU
	4403.0-04.0										DOL MICXL GY/BRN ANHY/GYP NO FLU
	4404.0-05.0										DOL MICXL GY/BRN ANHY/GYP NO FLU
	4405.0-06.0										DOL MIXCL BRN SM ANHY SM FRACS NO FLU
	4406.0-07.0										DOL MICXL BRN SM ANHY SM FRACS NO FLU
	4407.0-08.0										DOL MICXL BRN LG ANHY FD FRACS SCAT SHY NO FLU
	4408.0-09.0										DOL MICXL BRN LG ANHY FD FRACS NO FLU
	4409.0-10.0										DOL MICXL BRN SM ANHY SCAT S/P NO FLU
	4410.0-11.0										DOL MICXL BRN SM ANHY SCAT S/P NO FLU
	4411.0-12.0										DOL MICXL BRN ANHY FD FRACS BRN S/P NO FLU
	4412.0-13.0										DOL MICXL BRN SCAT ANHY NOD SCAT S/P NO FLU
	4413.0-14.0										DOL MICXL BRN SCAT S/P NO FLU
	4414.0-15.0										DOL MICXL BRN SCAT ANHY/GYP SCAT S/P NO FLU
	4415.0-16.0										DOL MICXL BRN SCAT ANHY/GYP SCAT S/P NO FLU
	4416.0-17.0										DOL MICXL BRN SCAT S/P NO FLU
	4417.0-18.0										DOL MICXL BRN SCAT S/P NO FLU
	4418.0-19.0										DOL MICXL BRN SCAT S/P NO FLU
	4419.0-20.0										DOL MICXL BRN SCAT S/P NO FLU
	4420.0-21.0										DOL VFXLN GY/BRN SM ANHY/GYP SCAT S/P NO FLU
	4421.0-22.0										DOL VFXLN GY SCAT VUG/PP BO SM ANHY GLD FLU
	4422.0-23.0										DOL VFXLN GY SCAT VUG/PP BO SM ANHY GLD FLU
	4423.0-24.0										DOL VFXLN BRN PPP SCAT SM ANHY ANHY FD FRACS GLD FLU
	4424.0-25.0										DOL VFXLN BRN PPP VTFRAC ANHY/GYP GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PETROLEUM
SERVICES, INC.

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
					PORE	PORE	PORE	PORE	DENS	DENS	
	4399.0-4400.0										DOL MICXL BF TR BO NO FLU
	4400.0-01.0										DOL MICXL BF SM ANHY/GYP SCAT S/P NO FLU
	4401.0-02.0										DOL MICXL BF SM ANHY/GYP SCAT S/P NO FLU
	4402.0-03.0										DOL MICXL BF LG ANHY INC SCAT S/P NO FLU
	4403.0-04.0										DOL MICXL GY/BRN ANHY/GYP NO FLU
	4404.0-05.0										DOL MICXL GY/BRN ANHY/GYP NO FLU
	4405.0-06.0										DOL MIXCL BRN SM ANHY SM FRACS NO FLU
	4406.0-07.0										DOL MICXL BRN SM ANHY SM FRACS NO FLU
	4407.0-08.0										DOL MICXL BRN LG ANHY FD FRACS SCAT SHY NO FLU
	4408.0-09.0										DOL MICXL BRN LG ANHY FD FRACS NO FLU
	4409.0-10.0										DOL MICXL BRN SM ANHY SCAT S/P NO FLU
	4410.0-11.0										DOL MICXL BRN SM ANHY SCAT S/P NO FLU
	4411.0-12.0										DOL MICXL BRN ANHY FD FRACS BRN S/P NO FLU
	4412.0-13.0										DOL MICXL BRN SCAT ANHY NOD SCAT S/P NO FLU
	4413.0-14.0										DOL MICXL BRN SCAT S/P NO FLU
	4414.0-15.0										DOL MICXL BRN SCAT ANHY/GYP SCAT S/P NO FLU
	4415.0-16.0										DOL MICXL BRN SCAT ANHY/GYP SCAT S/P NO FLU
	4416.0-17.0										DOL MICXL BRN SCAT S/P NO FLU
	4417.0-18.0										DOL MICXL BRN SCAT S/P NO FLU
	4418.0-19.0										DOL MICXL BRN SCAT S/P NO FLU
	4419.0-20.0										DOL VFXLN GY/BRN SM ANHY/GYP SCAT S/P NO FLU
	4420.0-21.0										DOL VFXLN GY SCAT VUG/PP BO SM ANHY GLD FLU
	4421.0-22.0										DOL VFXLN GY SCAT VUG/PP BO SM ANHY GLD FLU
	4422.0-23.0										DOL VFXLN BRN PPP SCAT SM ANHY ANHY FD FRACS GLD FLU
	4423.0-24.0										DOL VFXLN BRN PPP VTFRAC ANHY/GYP GLD FLU
	4424.0-25.0										

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG: FLUID: BRINE

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	CORE NO. 8	4425.0-4485.0	CUT 60'	REC 60'	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
83	4425.0-26.0		0.32	PLUG	13.2	6.3	53.1	2.82	DOL SUC VUG/PPP BKN VTFRAC FOSS YL FLU	
84	4426.0-27.0		3.05	PLUG	12.8	24.7	35.6	2.77	DOL SUC PPP SM ANHY SPT B0 VTFRAC YL FLU	
85	4427.0-28.0		0.25	PLUG	14.0	12.8	33.5	2.82	DOL SUC PPP SM ANHY SPT B0 VTFRAC YL FLU	
86	4428.0-29.0		75.00	73.00	11.8	30.5	36.9	2.81	DOL VFXLN TO SUC SM ANHY YL FLU	
87	4429.0-30.0		83.00	77.00	13.9	29.6	41.8	2.81	DOL VFXLN TO SUC SM ANHY YL FLU	
88	4430.0-31.0		0.03	PLUG	11.4	28.9	39.2	2.80	DOL VFXLN TO SUC ANHY FD FRACS YL FLU	
89	4431.0-32.0		0.19	PLUG	6.1	22.0	55.9	2.83	DOL VFXLN PPP SPT B0 VTFRAC YL FLU	
90	4432.0-33.0		0.19	PLUG	4.8	9.8	53.2	2.84	DOL VFXLN PPP SPT B0 VTFRAC YL FLU	
91	4433.0-34.0		0.53	FRAC	2.6	17.0	53.0	2.85	DOL VFXLN PPP SCAT ANHY FRACS YL FLU	
92	4434.0-35.0		0.80	PLUG	8.3	28.6	49.4	2.82	DOL VFXLN PPP SCAT ANHY FRACS YL FLU	
93	4435.0-36.0		0.28	PLUG	6.2	26.1	37.5	2.82	DOL VFXLN PPP B0 SM SCAT ANHY VTFRAC YL FLU	
94	4436.0-37.0		1.42	0.75	4.4	20.2	50.6	2.85	DOL VFXLN PPP B0 SM SCAT ANHY VTFRAC YL FLU	
95	4437.0-38.0		0.46	0.27	4.1	14.2	64.8	2.86	DOL VFXLN SCAT PPP B0 SM ANHY ANHY FD FRACS YL FLU	
96	4438.0-39.0		0.08	PLUG	2.4	2.6	58.3	2.83	DOL VFXLN SCAT PPP B0 SM ANHY VTFRAC SPT FLU	
	4439.0-40.0								DOL MICXL TN SM ANHY LG S/P NO FLU	
	4440.0-41.0								DOL MICXL TN SM ANHY SCAT THN S/P NO FLU	
	4441.0-42.0								DOL MICXL TN SM ANHY SCAT THN S/P NO FLU	
	4442.0-43.0								DOL MICXL TN SM ANHY SCAT THN S/P NO FLU	
	4443.0-44.0								SD VFG DOL SCAT SHY LAM S/P NO FLU	
	4444.0-45.0								SD VFG GY DOL SCAT GY SH BLK S/P NO FLU	
	4445.0-46.0								DOL MICXL TN SCAT S/P NO FLU	
	4446.0-47.0								DOL MICXL TN SCAT S/P NO FLU	
	4447.0-48.0								DOL VFXLN GY SDY LG SH NO FLU	
	4448.0-49.0								DOL VFXLN GY SDY LG SH NO FLU	
	4449.0-50.0								DOL VFXLN GY SDY SCAT SH NO FLU	
	4450.0-51.0								DOL VFXLN BF SCAT S/P NO FLU	

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
G.C.D.
HOGES OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
	4451.0-52.0							DOL VFXLN BF SCAT S/P NO FLU
	4452.0-53.0							DOL MICXL TN ANHY FD FRACS SCAT S/P NO FLU
	4453.0-54.0							DOL MICXL TN ANHY FD FRACS SCAT S/P NO FLU
	4454.0-55.0							DOL MICXL TN ANHY/GYP SCAT S/P NO FLU
	4455.0-56.0							DOL VFXLN BF SM ANHY SCAT S/P NO FLU
	4456.0-57.0							DOL MICXL BF LG S/P NO FLU
	4457.0-58.0							DOL MICXL BF THN S/P SM ANHY NO FLU
	4458.0-59.0							DOL VFXLN BF SCAT GY S/P NO FLU
	4459.0-60.0							DOL SLTY SHY GY THN LAM SH NO FLU
	4460.0-61.0							DOL VFXLN BF GY S/P NO FLU
	4461.0-62.0							DOL MICXL GY SCAT SHY ANHY/GYP SCAT S/P NO FLU
	4462.0-63.0							DOL MICXL GY SM ANHY SCAT S/P NO FLU
	4463.0-64.0							DOL MICXL GY ANHY/GYP NO FLU
	4464.0-65.0							DOL MICXL GY SM ANHY ANHY FD FRACS NO FLU
	4465.0-66.0							DOL MICXL GY SM ANHY ANHY FD FRACS NO FLU
	4466.0-67.0							DOL MICXL GY SM ANHY SCAT S/P NO FLU
	4467.0-68.0							DOL MICXL GY THN LAM S/P SCAT ANHY NO FLU
	4468.0-69.0							DOL MICXL BF THN LAM S/P NO FLU
	4469.0-70.0							DOL MICXL GY SPT B0 SPT PPP NO FLU
	4470.0-71.0							DOL MICXL GY SPT B0 SCAT S/P NO FLU
	4471.0-72.0							DOL MICXL GY SPT B0 SCAT VUG NO FLU
	4472.0-73.0							DOL MICXL GY SPT B0 SCAT PPP NO FLU
	4473.0-74.0							DOL MICXL GY ANHY FD FRACS LG SH NO FLU
	4474.0-75.0							DOL MICXL BF THN LAM SH NO FLU
	4475.0-76.0							DOL VFXLN BF THN GY S/P NO FLU
	4476.0-77.0							DOL VFXLN GY ANHY/GYP FRACS GYSH NO FLU
97	4477.0-78.0	0.52	0.10	3.6	22.0	54.0	2.85	DOL FXLN BF PPP B0 GLD FLU
98	4478.0-79.0	0.63	0.10	1.5	17.4	52.1	2.83	DOL FXLN BF PPP B0 GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
99	4479.0-80.0	0.15	0.10	3.2	8.4	67.9	2.84	DOL FXLN BF PPP BO GLD FLU
	4480.0-81.0							DOL VFXLN SSHY GYSH NO FLU
	4481.0-82.0							DOL SLTY SHY DK GY NO FLU
	4482.0-83.0							DOL VFXLN BF GY S/P NO FLU
	4483.0-84.0							DOL VFXLN BF GY/BRN S/P NO FLU
	4484.0-85.0							DOL MICXL TN GY/BRN S/P NO FLU
CORE NO. 9 4485.0-4508.0 CUT 23' REC 23'								
100	4485.0-86.0	0.21	0.07	2.8	12.7	52.2	2.83	DOL SLTY SHY DK GY SCAT S/P NO FLU
101	4486.0-87.0	0.23	0.21	3.4	3.8	70.2	2.82	DOL VFXLN GY SCAT GY SH SCAT PPP BO DK GLD FLU
102	4487.0-88.0	0.25	0.24	1.2	19.1	55.1	2.85	DOL VFXLN GY SCAT S/P SCAT PPP BO HFRACS GLD FLU
	4488.0-89.0	0.18	0.12	1.2	16.4	63.1	2.84	DOL VFXLN BF CLN PPP HFRACS GLD FLU
	4489.0-90.0	3.66	3.56	4.3	7.6	45.8	2.82	DOL VFXLN BF CLN VTFRACS SPT BO GLD FLU
	4490.0-91.0	42.00	8.58	10.3	14.2	33.5	2.78	DOL VFXLN BF CLN VTFRACS SCAT PPP BO GLD FLU
	4491.0-92.0	18.00	17.00	11.2	9.5	37.7	2.80	DOL VFXLN BF CLN PPP BO/WTR GLD FLU
	4492.0-93.0	5.10	3.95	7.9	6.6	41.7	2.80	DOL VFXLN BF CLN PPF SCAT BO/WTR GLD FLU
	4493.0-94.0	11.00	9.72	9.2	14.3	58.8	2.79	DOL VFXLN BF CLN PPP SCAT VUG GLD FLU
	4494.0-95.0	0.12	PLUG	11.1	4.9	60.3	2.79	DOL VFXLN BF CLN PPP SCAT SM ANHY GLD FLU
	4495.0-96.0	20.00	12.00	13.0	4.6	40.8	2.75	DOL VFXLN TO SUC CLN PPP GLD FLU
	4496.0-97.0	0.12	PLUG	12.4	4.5	36.4	2.73	SCAL SAMPLE (SAME AS ABOVE)
	4497.0-98.0	2.06	1.87	9.9	17.2	40.4	2.72	DOL FXLN TO SUC CLN GLD FLU
	4498.0-99.0	9.72	9.56	12.8	29.9	31.4	2.80	DOL FXLN TO SUC CLN GLD FLU
	4499.0-4500.0	15.00	8.80	12.8	28.3	32.7	2.79	DOL FXLN TO SUC CLN SCAT PPP BO/WTR VTFRAC GLD FLU
	4500.0-01.0	8.30	7.25	13.4	13.4	40.7	2.82	DOL VFXLN SDY CLN VTFRAC GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
O.C.D.
HOBBS OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. Hale #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
CORE NO. 10 4508.0-4563.0 CUT 55' REC 55'								
116	4504.0-05.0	20.00	19.00	15.1	22.6	45.1	2.81	DOL VFXLN SDY CLN VTFRAC GLD FLU
117	4505.0-06.0	0.15	PLUG	15.7	26.2	42.8	2.82	DOL VFXLN SDY CLN VTFRAC GLD FLU
118	4506.0-07.0	0.06	PLUG	17.3	24.4	35.4	2.82	SCAL SAMPLE (SAME AS ABOVE)
119	4507.0-08.0	0.10	PLUG	14.0	26.4	31.4	2.78	DOL VFXLN SDY CLN VTFRAC GLD FLU
DOL VFXLN SSDY SM ANHY VTFRAC PPP YL FLU								
DOL VFXLN SSDY SCAT SH STY PPP YL FLU								
DOL VFXLN BF H/VTFRACS SCAT PPP B0 ANHY YL FLU								
DOL VFXLN BF SCAT SH STY PPP SCAT B0 YL BLU								
DOL VFXLN BF H/VTFRACS SCAT PPP B0 YL FLU								
DOL VFXLN BF H/VTFRACS SCAT PPP YL FLU								
DOL F TO MXLN DOL DK BRN SH STY PPP YL FLU								
DOL F TO MXLN DOL DK BRN SCAT PPP SCAT H/VTFRACS YL FLU								
DOL VFXLN BF H/VTFRACS VUG TO PPP SCAT B0 YL FLU								
DOL VFXLN BF VTFRAC VUG TO PP SCAT B0 YL FLU								
DOL CXLN SDY SM ANHY/GYP VTFRAC DK GLD FLU								
DOL MXLN SDY GD PPP SCAT YL FLU								
DOL FSUC TO SDY GD PPP DK GLD FLU								
DOL VFG GILSINITE DOL VFXLN PPP B0 DOL VFXLN GY SCAT FLU								
DOL VFXLN GY H/VTFRACS SCAT VUGS B0 SSHY SCAT GLD FLU								
DOL MICXL GY H/VTFRACS SCAT VUGS B0 SCAT GLD FLU								
DOL MICXL GY H/VTFRACS SCAT VUGS B0 SCAT GLD FLU								
DOL MICXL GY TO BF VTFRACS B0 SCAT S/P SCAT GLD FLU								

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
					PORE	---	PORE	---	DENS	---	
138	4526.0-27.0	0.91	0.42	2.4	10.6	---	31.3	---	2.86	---	DOL SLTY SHY GY DOL MXLN BF LG ANHY INC
139	4527.0-28.0	25.00	FRAC	7.9	3.5	---	35.2	---	2.79	---	DOL MXLN BF VTRAC SM ANHY/GYP SPT GLD FLU
140	4528.0-29.0	4.55	2.22	6.3	7.1	---	30.9	---	2.81	---	DOL FXLN BF PPP SM ANHY/GYP SPT GLD FLU
141	4529.0-30.0	7.40	6.60	7.1	0.2	---	43.2	---	2.80	---	DOL FXLN BF SCAT PPP SM ANHY SPT GLD FLU
142	4530.0-31.0	1.02	0.32	2.6	4.9	---	45.7	---	2.76	---	DOL FXLN BF PPP SCAT VUGS ANHY FD FRACS SCAT B0 YL FLU
143	4531.0-32.0	0.97	0.90	3.7	18.4	---	53.7	---	2.83	---	DOL VFXLN BF TO GY VUGS B0 FTFRAC ANHY INC SCAT B0 YL FLU
144	4532.0-33.0	13.00	9.20	7.8	20.6	---	40.5	---	2.86	---	DOL VFXLN BF VUG ANHY FD FRAC SCAT B0 YL FLU
145	4533.0-34.0	22.00	15.00	9.8	15.6	---	41.1	---	2.80	---	DOL VFXLN BF SM ANHY/GYP ANHY FD FRACS VUG TO PPP
146	4534.0-35.0	21.00	16.00	12.8	25.0	---	38.7	---	2.82	---	DOL VFXLN BF VUG TO PPP SCAT SM ANHY YL FLU
147	4534.0-36.0	12.00	11.00	10.8	22.4	---	34.5	---	2.82	---	DOL VFXLN GY VUG TO PPP SM ANHY SPT GLD FLU
148	4536.0-37.0	0.88	0.46	5.1	28.1	---	36.4	---	2.85	---	DOL VF TO MICXL GY VUG H/VTRACS ANHY SPT GLD FLU
149	4537.0-38.0	1.29	0.60	4.6	19.1	---	41.1	---	2.85	---	DOL VF TO MICXL TY VUG ANHY NOD SPT B0 SPT GLD FLU
150	4538.0-39.0	0.60	0.42	4.3	20.8	---	47.2	---	2.83	---	DOL FXLN SSDY BF SCAT VUG TO PP SCAT B0 YL FLU
151	4539.0-40.0	14.00	12.00	6.8	20.3	---	45.5	---	2.82	---	DOL FXLN-MICXL BF TO GY SCAT B0 SCAT B0 YL FLU
152	4540.0-41.0	2.22	0.12	3.0	21.3	---	59.9	---	2.81	---	DOL VFXLN TO MICXL GY SCAT VUG B0 SH STY YL FLU
153	4541.0-42.0	3.70	1.42	2.8	17.7	---	43.6	---	2.84	---	DOL MICXL GY ANHY/GYP FD FRACS SH STY VUG SPT B10 YL FLU
154	4542.0-43.0	46.00	39.00	4.4	15.3	---	40.6	---	2.83	---	DOL FXLN BF VUG DOL MICXL H/VTRAC S/P SCAT YL FLU
155	4543.0-44.0	52.00	0.38	4.2	13.8	---	41.4	---	2.83	---	DOL VFXLN BF H/VTRACS B0 SCAT PPP YL FLU
156	4544.0-45.0	1.40	1.30	6.4	21.2	---	38.4	---	2.83	---	DOL VFXLN DK GY VUG TO PPP B0 VTRACS YL FLU
157	4545.0-46.0	1.00	0.27	2.1	9.0	---	67.2	---	2.79	---	DOL MICXL GY H/VTRACS PPP VUG B0 YL FLU
	4546.0-47.0										DOL MICXL LT GY ANHY FD FRACS SCAT S/P NO FLU
	4547.0-48.0										DOL MICXL LT GY ANHY FD FRACS SPT DK B0 NO FLU
	4548.0-49.0										DOL VFXLN WH ANHY FD FRACS ANHY/GYP NO FLU
	4549.0-50.0										DOL MICXL LT GY SM ANHY SCAT S/P NO FLU
	4550.0-51.0										DOL MICXL LT GY SM ANHY SCAT S/P NO FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PETROLEUM
SERVICES INC

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
158	4551.0-52.0	0.22	0.02	1.4	17.4	54.0	2.82	DOL MICXL GY ANHY FD FRACS VUG B0 GLD FLU
159	4552.0-53.0	0.34	0.31	1.4	15.8	61.6	2.82	DOL VFXLN TO MICXL BF H/VT FRACS SCAT VUG B0 GLD F
160	4553.0-54.0	0.43	0.30	1.7	11.2	72.7	2.80	DOL MICXL-VFXLN GY LG ANHY SH STY SCAT VUG SCAT GLD FLU
161	4554.0-55.0	1.90	1.75	5.3	20.8	36.1	2.82	DOL FXLN BF PPP SM ANHY DOL MICXL BF YL FLU
162	4555.0-56.0	0.20	0.01	0.9	13.9	49.1	2.84	DOL VFXLN BF H/VTFRACS SM ANHY SPT YL FLU
163	4556.0-57.0	0.01	0.01	0.9	10.3	55.2	2.82	DOL VFXLN WH H/VTFRACS B0 SPT PPP YL FLU
164	4557.0-58.0	0.09	0.01	0.7	8.4	44.0	2.82	DOL VFXLN WH VTFRAC SM FRACS B0 YL FLU
165	4558.0-59.0	0.03	<.01	0.4	0.1	44.4	2.84	DOL VFXLN GY DOL MICXL BF DK B0 SPT FLU
166	4559.0-60.0	7.60	PLUG	9.1	0.1	35.1	2.81	DOL VFG SDY BRN SM ANHY DOL MICXL BF SM FRACS SPT
167	4560.0-61.0	0.08	0.01	0.5	0.1	44.4	2.83	DOL VFXLN WH VTFRAC SM ANHY SPT FLU
168	4561.0-62.0	0.11	PLUG	1.4	0.1	50.0	2.81	DOL VFXLN WH H/VTFRACS B0 SPT FLU
169	4562.0-63.0	<.01	PLUG	0.7	0.1	43.2	2.83	DOL VFXLN LT GY SPT PPP B0 LG ANHY SPT FLU

CORE NO. 11 4563.0-4564.0 CUT 1' JAMMED (NO REC.)

DRILLED

4564.0-67.0

CORE NO. 12 4567.0-4627.0 CUT 60' REC 60'

4567.0-68.0	DOL MICXL BF LAM S/P NO FLU
4568.0-69.0	DOL MICXL BF LAM S/P NO FLU
4569.0-70.0	DOL MICXL BF LAM S/P NO FLU
4570.0-70.5	DOL MICXL TO VFXLN GY SCAT S/P SPT FLU
4570.5-71.0	DOL VFXLN SM ANHY H/VTFRAC S/P YL FLU
4571.0-72.0	DOL VFXLN SCAT LG ANHY VT FRAC S/P YL FLU
4572.0-73.0	DOL VFXLN LG ANHY S/P PPP YL FLU
4573.0-74.0	DOL VFXLN H/VTFRACS S/P SCAT SDY DOL YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
174	4574.0-75.0	5.60	2.60	4.3	17.1	44.7	2.84	DOL VFXLN SCAT PPP SH FD FRACS SPT YL FLU
175	4575.0-76.0	<.01	PLUG	1.8	24.6	51.4	2.83	DOL SLTY SHY GY SCAT DOL VFXLN PPP BO SCAT YL FLU
176	4576.0-77.0	0.41	0.17	2.4	10.2	61.8	2.85	DOL VFXLN VUG TO PP BO VTFRAC DOL SLTY SHY GLD FLU
	4577.0-78.0							DOL MICXL GY SCAT S/P SHY VTFRAC NO FLU
177	4578.0-79.0	66.00	56.00	12.3	26.2	32.2	2.82	DOL VFXLN GY VUG SCAT LG ANHY YL FLU
178	4579.0-80.0	38.00	35.00	14.4	30.4	33.3	2.81	DOL VFXLN SDY ANHY FD FRACS PPP YL FLU
179	4580.0-81.0	40.00	32.00	14.8	30.7	31.1	2.80	DOL VFXLN SDY PPP YL FLU
180	4581.0-82.0	35.00	34.00	14.0	29.3	32.5	2.80	DOL VFXLN SDY VUG TO PP SCAT S/P YL FLU
181	4582.0-83.0	26.00	22.00	14.1	29.6	33.3	2.78	DOL VFXLN SDY PPP SM ANHY YL FLU
182	4583.0-84.0	0.54	PLUG	16.7	24.1	39.7	2.82	DOL VFXLN SDY LG SD INC VTFRAC YL FLU
183	4584.0-85.0	80.00	28.00	15.7	27.1	39.3	2.80	DOL VFXLN SDY VTFRAC SD INC YL FLU
184	4585.0-86.0	34.00	26.00	15.7	30.3	31.8	2.81	DOL VFXLN SDY PPP H/VTFRACS SCAT S/P YL FLU
185	4586.0-87.0	45.00	29.00	12.6	20.2	33.4	2.82	DOL VFXLN VUG TO PP BO H/VT FRACS YL FLU
186	4587.0-88.0	15.00	12.00	8.7	26.3	33.6	2.80	DOL VFXLN FRACS VUG TO PP SCAT S/P YL FLU
187	4588.0-89.0	11.00	PLUG	8.7	16.6	40.8	2.82	DOL VFXLN BKN FRAC VUG TO PP SCAT S/P YL FLU
188	4589.0-90.0	11.00	9.80	11.1	31.6	35.8	2.81	DOL VFXLN SSDY PPP SH FD FRACS YL FLU
189	4590.0-91.0	8.50	7.30	10.0	33.7	33.6	2.79	DOL VFXLN SSDY VUG TO PPP SH FD FRACS YL FLU
190	4591.0-92.0	19.00	18.00	11.5	34.5	36.2	2.82	DOL VFXLN SSDY VUG TO PPP FRACS YL FLU
191	4592.0-93.0	45.00	11.00	9.1	26.3	31.9	2.79	DOL VFXLN SSDY VUG TO PPP SM ANHY FRACS YL FLU
192	4593.0-94.0	9.90	7.70	11.6	25.8	27.4	2.80	DOL VFXLN SSDY VUG TO PP SH FD FRACS YL FLU
193	4594.0-95.0	70.00	38.00	10.4	18.0	36.0	2.81	DOL VFXLN SCAT S/P FRACS SCAT PPP YL FLU
194	4595.0-96.0	7.80	6.20	6.2	17.2	37.3	2.83	DOL VFXLN SH FD FRACS VUG TO PP YL FLU
195	4596.0-97.0	2.31	PLUG	6.9	27.4	32.1	2.82	DOL VFXLN SH FD FRACS H/VTFRACS YL FLU
196	4597.0-98.0	41.00	6.00	4.0	9.5	46.7	2.80	DOL VFXLN SH FD FRACS H/VTFRACS YL FLU
197	4598.0-99.0	22.00	17.00	6.6	15.4	38.0	2.80	DOL VFXLN SCAT VUG TO PPP BO H/VTFRACS YL FLU
198	4599.0-4600.0	5.80	2.96	5.3	13.5	46.2	2.77	DOL VFXLN SCAT VUG TO PPP H/VTFRACS SM ANHY YL FLU
199	4600.0-01.0	4.20	PLUG	11.7	26.4	34.6	2.79	DOL VFXLN SSDY VTFRACS SCAT SM ANHY YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.

RECEIVED
JUN 8 1983
C.C.D.
HOBBS OFFICE



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG: FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL%		WTR%		GRN		FORMATION DESCRIPTION
					PORE	PORE	PORE	PORE	DENS	DENS	
200	4601.0-02.0	117.00	32.00	14.0	33.8	32.9	32.9	2.78			DOL VFXLN SDY VTFRAC PPP SM ANHY YL FLU
201	4602.0-03.0	69.00	5.80	13.7	33.6	31.6	31.6	2.82			DOL VFXLN SSDY VUG SM ANHY YL FLU
202	4603.0-04.0	96.00	83.00	11.9	18.3	31.6	31.6	2.79			DOL VFXLN SSDY VUG SM ANHY YL FLU
203	4604.0-05.0	283.00	58.00	15.5	24.6	33.4	33.4	2.82			DOL VFXLN SDY VUG SM ANHY YL FLU
204	4605.0-06.0	245.00	15.00	14.1	22.1	31.3	31.3	2.80			DOL VFXLN SDY VUG SM ANHY YL FLU
205	4606.0-07.0	382.00	310.00	18.5	36.0	27.7	27.7	2.81			DOL VFXLN LG VUGS SM ANHY VTFRAC YL FLU
206	4607.0-08.0	48.00	38.00	17.8	32.9	29.0	29.0	2.82			DOL VFXLN SDY VUG TO PPP SM ANHY YL FLU
207	4608.0-09.0	53.00	53.00	15.4	34.3	30.0	30.0	2.83			DOL VFXLN SDY VUG TO PPP ANHY INC FRACS YL FLU
208	4609.0-10.0	42.00	34.00	17.4	31.4	32.4	32.4	2.83			DOL VFXLN SDY PPP SM ANHY YL FLU
209	4610.0-11.0	205.00	23.00	16.5	34.5	29.0	29.0	2.83			DOL VFXLN SDY PPP SM ANHY YL FLU
210	4611.0-12.0	9.50	8.30	13.5	30.5	28.4	28.4	2.82			DOL VFXLN SDY PPP SM ANHY YL FLU
211	4612.0-13.0	15.00	10.00	12.5	26.5	30.7	30.7	2.82			DOL VFXLN SSDY VUG TO PPP SM STY SM ANHY YL FLU
212	4613.0-14.0	26.00	24.00	12.8	23.5	29.2	29.2	2.80			DOL VFXLN VUG SM ANHY YL FLU
213	4614.0-15.0	13.00	9.10	11.7	20.7	27.8	27.8	2.83			DOL VFXLN VUG SM ANHY YL FLU
214	4615.0-16.0	21.00	11.00	12.3	20.1	26.0	26.0	2.83			DOL VFXLN VUG SM ANHY YL FLU
215	4616.0-17.0	16.00	10.00	13.3	19.7	34.4	34.4	2.83			DOL VFXLN VUG SM ANHY YL FLU
216	4617.0-18.0	44.00	38.00	15.6	26.6	28.0	28.0	2.83			DOL VFXLN VUG SM ANHY YL FLU
217	4618.0-19.0	71.00	65.00	15.7	19.4	34.0	34.0	2.83			DOL VFXLN VUG SM ANHY YL FLU
218	4619.0-20.0	11.00	6.55	11.5	33.5	28.4	28.4	2.82			DOL VFXLN SDY ANHY FD FRACS PPP YL FLU
219	4620.0-21.0	3.87	PLUG	15.3	27.3	31.2	31.2	2.80			DOL VFXLN SDY BKN FRACS ANHY YL FLU
220	4621.0-22.0	18.00	PLUG	16.9	34.7	26.0	26.0	2.83			DOL VFXLN SDY BKN FRACS ANHY YL FLU
221	4622.0-23.0	29.00	PLUG	19.0	30.4	32.8	32.8	2.85			DOL VFXLN SDY BKN FRACS ANHY YL FLU
	4623.0-24.0										DOL VFXLN SDY BKN FRACS ANHY YL FLU-BKN/NA
222	4624.0-25.0	37.00	35.00	18.2	35.1	25.7	25.7	2.83			DOL VFXLN SDY SD INC SM ANHY PPP YL FLU
223	4625.0-26.0	29.00	28.00	17.7	31.5	25.9	25.9	2.82			DOL VFXLN SDY SM ANHY VUG TO PPP YL FLU
224	4626.0-27.0	0.65	PLUG	9.5	28.1	41.6	41.6	2.83			DOL VFXLN SCAT SDY FRACS VUG TO PPP YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PETROLEUM
SERVICES, INC

PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
		CORE NO. 13	4627.0-4683.0		CUT 56'	REC 56'		
225	4627.0-28.0	46.00	30.00	14.2	28.7	43.9	2.78	DOL VFXLN GY VUG TO PPP SCAT SDY GLD FLU
226	4628.0-29.0	58.00	54.00	15.5	25.0	34.8	2.81	DOL VFXLN BF SSDY PPP SM GILSONITE GLD FLU
227	4629.0-30.0	41.00	PLUG	18.3	18.7	33.0	2.83	DOL VFG SDY BRN SCAT SM ANHY GLD FLU
228	4630.0-31.0	19.00	PLUG	15.6	20.9	31.9	2.79	DOL VFG SDY BRN VTFRAC SCAT SM ANHY GLD FLU
229	4631.0-32.0	47.00	15.00	11.8	24.1	33.4	2.79	DOL VFG SDY BRN SH STY SCAT SM ANHY GLD FLU
230	4632.0-33.0	33.00	30.00	14.4	31.3	37.6	2.81	DOL VFG SDY BRN SCAT SD INCL PPP AM ANHY GLD FLU
231	4633.0-34.0	87.00	77.00	14.5	25.0	41.8	2.82	DOL VFXLN TO SDY VUG TO PPP SM ANHY INC GLD FLU
232	4634.0-35.0	63.00	36.00	16.5	27.6	33.5	2.83	DOL VFG SDY BRN SM ANHY/GYP VUG TO PPP GLD FLU
233	4635.0-36.0	38.00	29.00	17.6	30.4	24.1	2.84	DOL VFG SDY BRN VTFRAC PPP SM ANHY GLD FLU
234	4636.0-37.0	18.00	FRAC	14.8	24.6	30.8	2.81	DOL VFXLN SDY BRN PPP GLD FLU
235	4637.0-38.0	68.00	19.00	11.3	27.3	30.9	2.80	DOL VFXLN SDY BKN PPP SH STY GLD FLU
236	4638.0-39.0	18.00	15.00	14.2	22.5	31.2	2.81	DOL VFXLN SDY BRN PPP VTFRAC GLD FLU
237	4639.0-40.0	18.00	18.00	17.3	21.5	36.4	2.82	DOL VFXLN SDY BRN PPP GLD FLU
238	4640.0-41.0	23.00	22.00	14.9	24.7	33.8	2.83	DOL VFXLN SDY BRN PPP GLD FLU
239	4641.0-42.0	16.00	16.00	17.2	20.5	30.8	2.82	DOL VFXLN SDY BRN SM ANHY PPP GLD FLU
240	4642.0-43.0	10.00	FRAC	14.3	27.6	24.8	2.81	DOL VFXLN SDY BRN SM ANHY PPP S/P GLD FLU
241	4643.0-44.0	170.00	13.00	11.7	21.0	40.0	2.82	DOL VFXLN SDY BRN VTFRAC SM ANHY VUG SH STY GLD FLU
242	4644.0-45.0	16.00	11.00	12.3	20.9	39.0	2.83	DOL VFXLN TO SDY LG VUG SD INC SCAT PPP GLD FLU
243	4645.0-46.0	2.60	PLUG	11.4	22.6	30.9	2.82	DOL VFXLN SDY VUG TO PPP VTFRAC SM ANHY GLD FLU
244	4646.0-47.0	33.00	27.00	13.7	30.3	31.6	2.82	DOL VFXLN SDY VUG TO PPP SD INC FRACS SM ANHY GLD FLU
245	4647.0-48.0	0.50	PLUG	5.5	25.3	47.7	2.83	DOL VFXLN VSCAT SDY ANHY VTFRAC VUG GLD FLU
246	4648.0-49.0	230.00	7.60	6.0	12.5	45.5	2.82	DOL VFXLN SCAT SD INC ANHY VUG GLD FLU
247	4649.0-50.0	8.50	PLUG	11.9	20.2	40.7	2.80	DOL VFXLN SDY VTFRAC B WTR/OIL PPP GLD FLU
248	4650.0-51.0	39.00	38.00	13.1	22.8	38.7	2.83	DOL VFXLN SDY SM ANHY SD INC PPP GLD FLU
249	4651.0-52.0	53.00	36.00	15.2	32.5	33.9	2.83	DOL VFXLN SDY SM ANHY PPP GLD FLU
250	4652.0-53.0	230.00	47.00	12.5	30.2	32.8	2.84	DOL VFXLN SDY SM ANHY PPP VTFRAC GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
251	4653.0-54.0	78.00	PLUG	15.1	19.7	44.2	2.82	DOL VFG SDY VTFRAC VUG TO PPP GLD FLU
252	4654.0-55.0	22.00	22.00	13.1	23.3	38.0	2.83	DOL VFXLN TO SDY SD INC VUG SM ANYH GLD FLU
253	4655.0-56.0	3.00	PLUG	14.5	18.6	41.8	2.82	DOL VFXLN TO SDY SD INC LG ANYH VUG TO PP GLD FLU
254	4656.0-57.0	81.00	40.00	10.9	21.9	38.6	2.81	DOL VFXLN GY SCAT SDY VUG TO PP ANYH GLD FLU
255	4657.0-58.0	12.50	FRAC	8.5	25.0	43.0	2.84	DOL VFXLN TO SDY ANYH VUG TO PPP GLD FLU
256	4658.0-59.0	11.00	9.00	8.5	25.5	42.3	2.85	DOL VFXLN TO SDY LG ANYH PPP VTFRAC GLD FLU
257	4659.0-60.0	1.56	PLUG	4.6	9.3	45.4	2.86	DOL VFXLN TO SDY LG ANYH BKN FRAC GLD FLU
258	4660.0-61.0	8.20	FRAC	6.2	20.3	34.0	2.84	DOL VFXLN BRN LG ANYH FRACS SCAT VUG TO PPP GLD FLU
259	4661.0-62.0	1.70	1.20	5.5	17.5	40.7	2.84	DOL VFXLN BRN LG ANYH FRACS SCAT VUG TO PPP GLD FLU
260	4662.0-63.0	0.78	0.73	3.4	20.2	37.1	2.85	DOL VFXLN BRN ANYH VSCAT SDY FRACS GLD FLU
261	4663.0-64.0	1.20	1.10	5.5	19.2	33.0	2.85	DOL VFXLN GY SM ANYH SCAT VUG TO PPP SPT GLD FLU
262	4664.0-65.0	0.01	PLUG	3.6	21.9	49.6	2.84	DOL VFXLN GY SM ANYH SCAT VUG TO PPP SPT GLD FLU
263	4665.0-66.0	12.00	PLUG	13.7	21.8	39.9	2.84	DOL VFXLN TO SDY LG ANYH FRACS GLD FLU
264	4666.0-67.0	107.00	53.00	15.2	17.7	40.9	2.81	DOL VFXLN SDY PPP SM ANYH GLD FLU
265	4667.0-68.0	72.00	71.00	16.3	24.8	37.1	2.82	DOL VFXLN SDY PPP SM ANYH VTFRAC GLD FLU
266	4668.0-69.0	95.00	81.00	17.2	34.1	31.8	2.83	DOL VFXLN SDY PPP SM ANYH VTFRAC GLD FLU
267	4669.0-70.0	52.00	38.00	12.9	30.4	32.4	2.85	DOL VFXLN SDY PPP SM ANYH VTFRAC GLD FLU
268	4670.0-71.0	79.00	56.00	14.8	25.1	33.4	2.83	DOL VFXLN SDY LG SD INC PPP SM ANYH GLD FLU
269	4671.0-72.0	71.00	8.70	11.6	26.6	29.3	2.81	DOL VFXLN SDY PPP SM ANYH GLD FLU
270	4672.0-73.0	54.00	PLUG	15.6	31.2	29.9	2.81	DOL VFXLN SDY PPP SM ANYH GLD FLU
	4673.0-74.0							DOL VFXLN SDY PPP BKN FRAC GLD FLU - BKN/NA
	4674.0-75.0							DOL VFXLN SDY PPP BKN FRAC GLD FLU - BKN/NA
271	4675.0-76.0	17.00	PLUG	16.6	33.9	26.7	2.82	DOL VFXLN SDY BKN FRAC PPP GLD FLU
272	4676.0-77.0	40.00	PLUG	18.0	31.4	40.5	2.80	DOL VFXLN SDY BKN FRAC PPP GLD FLU
273	4677.0-78.0	23.00	PLUG	19.6	27.9	33.8	2.82	DOL VFXLN SDY BKN FRAC PPP GLD FLU
274	4678.0-79.0	29.00	24.00	17.4	23.1	43.8	2.81	DOL VFXLN SDY BKN FRAC PPP GLD FLU
275	4679.0-80.0	69.00	PLUG	16.5	30.5	37.6	2.81	DOL VFXLN SDY BKN FRAC PPP GLD FLU
276	4680.0-81.0	48.00	PLUG	15.3	26.9	37.9	2.82	DOL VFXLN SDY VTFRAC PPP GLD FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERMD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION

277	4681.0-82.0	27.00	PLUG	15.0	20.2	34.0	2.83	DOL VFXLN SDY SM ANHY PPP GLD FLU
278	4682.0-83.0	16.00	PLUG	13.7	23.5	35.0	2.84	DOL VFXLN SDY SM ANHY PPP GLD FLU
CORE NO. 14 4683.0-4643.0 CUT 60' REC 60'								
279	4683.0-84.0	86.00	35.00	16.2	24.1	33.7	2.81	DOL VFG SDY SCAT SM ANHY ORNG FLU
280	4684.0-85.0	47.00	36.00	18.5	21.2	34.2	2.80	DOL VFG SDY SCAT SM ANHY ORNG FLU
281	4685.0-86.0	33.00	28.00	17.0	18.9	42.6	2.80	DOL VFG SDY SCAT SM ANHY SCAT DOL VFXLN ORNG FLU
282	4686.0-87.0	74.00	68.00	17.8	21.6	30.6	2.81	DOL VFXLN SDY SCAT VUG TO PPP ORNG FLU
283	4687.0-88.0	59.00	33.00	16.1	9.7	46.7	2.81	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
284	4688.0-89.0	33.00	30.00	15.0	18.2	34.7	2.80	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
285	4689.0-90.0	53.00	PLUG	17.2	28.1	38.2	2.81	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
286	4690.0-91.0	36.00	31.00	15.7	20.9	40.8	2.80	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
287	4691.0-92.0	91.00	65.00	15.4	17.1	40.8	2.81	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
288	4692.0-93.0	85.00	72.00	14.7	26.7	39.3	2.80	DOL VFXLN SDY SCAT VUG TO PPP SM ANHY ORNG FLU
289	4693.0-94.0	82.00	PLUG	18.0	18.6	42.5	2.83	DOL VFXLN VUG 50% DOL VFG SDY GILSONITE YL TO ORNG FLU
290	4694.0-95.0	9.30	8.00	9.3	22.0	33.8	2.83	DOL VFXLN GY VUG SPT BO SM ANHY SPT YL FLU
291	4695.0-96.0	18.00	14.00	9.8	17.1	35.4	2.83	DOL VFXLN SSDY SM ANHY VUG SPT YL FLU
292	4696.0-97.0	5.00	FRAC	9.6	20.5	38.5	2.84	DOL VFXLN SSDY SCAT ANHY VUG SPT YL FLU
293	4697.0-98.0	69.00	50.00	11.2	18.7	45.2	2.83	DOL VFXLN SSDY SCAT ANHY VUG SPT YL FLU
294	4698.0-99.0	79.00	72.00	13.6	25.1	47.5	2.85	DOL VFXLN SSDY SCAT LG ANHY SCAT VUG SPT YL FLU
295	4699.0-4700.0	19.00	FRAC	10.7	12.0	43.6	2.83	DOL VFXLN SSDY SCAT ANHY SCAT VUG BO SPT YL FLU
296	4700.0-01.0	113.00	58.00	17.1	3.4	41.4	2.83	DOL VFXLN SSDY LG VUG SPT BO SPT GLD FLU
297	4701.0-02.0	237.00	78.00	14.1	6.5	45.2	2.83	DOL VFXLN SSDY LG VUG SPT BO SPT GLD FLU
298	4702.0-03.0	32.00	PLUG	12.3	13.3	36.5	2.85	DOL VFXLN TO SDY SCAT LG VUG SM ANHY YL FLU
299	4703.0-04.0	80.00	75.00	14.2	9.3	36.6	2.82	DOL VFXLN TO SDY VUG TO PPP SM ANHY SCAT BO YL FLU
300	4704.0-05.0	39.00	37.00	11.4	17.2	38.6	2.82	DOL VFXLN TO SDY VUG TO PPP SM ANHY YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG: FLUID: BRINE

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
301	4705.0-06.0	200.00	17.00	10.0	14.0	32.7	2.82	DOL VFXLN TO SDY VUG TO PPP SM ANHY YL FLU
302	4706.0-07.0	77.00	25.00	11.3	16.3	33.9	2.83	DOL VFXLN TO SDY VUG TO PPP SM ANHY YL FLU
303	4707.0-08.0	76.00	55.00	15.4	10.2	40.4	2.82	DOL VFXLN TO SDY VUG TO PPP SM ANHY YL FLU
304	4708.0-09.0	41.00	31.00	8.6	23.6	41.3	2.81	DOL MICXL BF SCAT PPP BO GLD FLU
305	4709.0-10.0	9.00	6.00	10.2	18.1	40.3	2.82	DOL VFXLN WH SCAT PPP BO LG ANHY SPT YL FLU
306	4710.0-11.0	19.00	PLUG	4.7	12.3	40.2	2.82	DOL FXLN BF PPP H/TFRACS S/P YL FLU
307	4711.0-12.0							DOL FXLN BF PPP VTFRAC SPT YL FLU - BKN/NA
308	4712.0-13.0	172.00	14.00	16.0	25.6	43.3	2.80	DOL VFXLN GILSONITE VTFRAC SCAT VUG SPT GLD FLU
309	4713.0-14.0	160.00	PLUG	16.5	23.3	33.5	2.79	DOL VFG SDY SM ANHY PPP VTFRAC YL FLU
310	4714.0-15.0	17.00	15.00	13.0	29.2	31.3	2.82	DOL VFG SDY LG ANHY PPP YL FLU
311	4715.0-16.0	28.00	10.00	12.9	27.2	31.0	2.81	DOL VFG SDY LG ANHY PPP YL FLU
312	4716.0-17.0	15.00	PLUG	14.6	27.7	31.1	2.82	DOL VFG SDY BKN FRAC SM ANHY YL FLU
313	4717.0-18.0	0.50	PLUG	12.8	28.5	31.3	2.82	DOL FXLN SDY VTFRAC SM ANHY YL FLU
314	4718.0-19.0	0.85	PLUG	13.0	20.0	38.5	2.80	DOL FXLN TO SDY LG ANHY GILSONITE YL GLD FLU
315	4719.0-20.0	4.50	PLUG	10.6	22.3	31.4	2.84	DOL FXLN TO SDY SM ANHY PPP SCAT S/P YL FLU
316	4720.0-21.0	26.00	13.00	10.8	17.7	44.3	2.82	DOL VFXLN SSDY ANHY FD FRACS VUG TO PPP SPT YL FLU
317	4721.0-22.0	12.00	11.00	11.0	24.6	37.4	2.83	DOL VFXLN SDY SCAT VUG SM ANHY GLD FLU
318	4722.0-23.0	25.00	23.00	10.4	13.0	39.9	2.85	DOL VFXLN SSDY LG VUG SCAT ANHY GLD FLU
319	4723.0-24.0	30.00	22.00	11.3	17.6	41.9	2.83	DOL VFXLN TO SDY SCAT VUG SH FD FRACS SM ANHY YL FLU
320	4724.0-25.0	36.00	30.00	12.8	23.5	35.1	2.82	DOL VFXLN TO SDY SCAT VUG SH/ANHY FD FRACS SM ANHY YL FLU
321	4725.0-26.0	31.00	29.00	11.6	26.4	33.4	2.84	DOL FXLN SDY LG VUGS ANHY H/TFRACS YL FLU
322	4726.0-27.0	16.00	11.00	10.5	20.1	30.7	2.84	DOL VFXLN SDY LG VUG VTFRAC SM ANHY YL FLU
323	4727.0-28.0	7.60	PLUG	12.3	21.9	37.9	2.84	DOL VFXLN SDY LG VUG VTFRAC SM ANHY YL FLU
324	4728.0-29.0	15.00	12.00	10.6	27.3	38.6	2.85	DOL VFG SDY VUG TO PPP SCAT BO SM ANHY YL FLU
325	4729.0-30.0	260.00	19.00	13.7	13.3	41.9	2.85	DOL VFG SDY VUG TO PPP SM ANHY YL FLU
326	4730.0-31.0	43.00	31.00	15.4	28.4	32.4	2.83	DOL VFXLN SDY PPP VTFRAC YL FLU
327	4731.0-32.0	47.00	PLUG	15.8	30.0	34.4	2.84	DOL VFXLN SDY PPP VTFRAC YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
327	4732.0-33.0	65.00	PLUG	14.5	36.5	28.9	2.83	DOL VFG SDY PPP YL FLU
328	4733.0-34.0	50.00	44.00	13.8	31.0	28.8	2.80	DOL VFXLN SDY BLK GILSONITE SM ANHY DK ORNG FLU
329	4734.0-35.0	40.00	38.00	14.3	23.9	34.1	2.85	DOL VFXLN SDY SCAT BLK GILSONITE SCAT VUG SPT GLD FLU
330	4735.0-36.0	39.00	PLUG	16.1	24.3	33.6	2.85	DOL VFXLN SDY SCAT BLK GILSONITE YL FLU
331	4736.0-37.0	240.00	34.00	13.6	33.4	29.1	2.83	DOL VFXLN SDY SCAT BLK GILSONITE LG ANHY SPT YL FLU
332	4737.0-38.0	44.00	PLUG	14.1	29.9	28.8	2.83	DOL VFXLN SDY GILSONITE ORNG FLU
	4738.0-39.0							DOL MICXL ANHY SH BKN FRACS YL FLU - BKN/NA
	4739.0-40.0							DOL MICXL WH SCAT SH SM ANHY YL FLU - BKN/NA
	4740.0-41.0							DOL MICXL WH SH STY ANHY BKN FRAC YL FLU - BKN/NA
333	4741.0-42.0	20.00	13.00	7.8	23.9	36.6	2.83	DOL VFXLN WH H/WTFRACS SCAT SH SPT YL FLU
	4742.0-43.0							DOL VFXLN WH SCAT VUG TO PPP SM ANHY SPT YL FLU-BKN
CORE NO. 15 4743.0-4803.0 CUT 60' REC 60'								
334	4743.0-44.0	26.00	21.00	9.1	15.9	54.0	2.83	DOL VFXLN WH H/WTFRACS SCAT OSTN SM ANHY SCAT YL FLU
335	4744.0-45.0	2.50	PLUG	9.0	13.6	69.9	2.84	DOL VFXLN BF PPP SM ANHY H/WTFRACS YL FLU
336	4745.0-46.0	8.00	5.50	12.5	23.7	35.1	2.82	DOL VFXLN BF PPP SM ANHY H/WTFRACS YL FLU
337	4746.0-47.0	4.50	4.00	10.8	30.6	36.9	2.80	DOL OOL SSDY GY SCAT PPP SM ANHY YL FLU
338	4747.0-48.0	5.40	5.10	10.1	29.9	32.1	2.83	DOL VFXLN SSDY VUG TO PPP SM ANHY YL FLU
339	4748.0-49.0	3.60	PLUG	11.6	33.6	33.1	2.83	DOL VFXLN SSDY VUG TO PPP SM ANHY YL FLU
340	4749.0-50.0	9.50	7.70	12.9	30.0	33.4	2.81	DOL FXLN SSDY PPP SM ANHY YL FLU
341	4750.0-51.0	8.60	6.50	11.9	19.1	36.6	2.81	DOL FXLN SSDY VUG TO PPP SM ANHY YL FLU
342	4751.0-52.0	15.00	15.00	12.5	21.8	36.6	2.81	DOL FXLN SSDY VUG TO PPP SM ANHY YL FLU
343	4752.0-53.0	3.40	3.30	9.2	15.2	31.7	2.81	DOL VFXLN BLK GILSONITE VUG TO PPP SPT YL FLU
344	4753.0-54.0	18.00	3.50	9.2	17.0	39.4	2.80	DOL VFXLN BLK GILSONITE VUG TO PPP SPT YL FLU
345	4754.0-55.0	6.00	5.40	8.3	16.3	39.4	2.81	DOL VFXLN GY SH STY H/WTFRACS SM ANHY VUG TO PPP SPT YL FLU
346	4755.0-56.0	145.00	9.00	7.1	21.0	42.1	2.81	DOL VFXLN SCAT GILSONITE GD PPP SCAT B0 VTFRACS SCAT YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
347	4756.0-57.0	6.90	3.50	5.5	10.3	52.7	2.82	DOL VFXLN SCAT GILSONITE PPP BO DOL MICXL FRACS YL
348	4757.0-58.0	3.30	0.50	4.1	5.2	48.9	2.82	DOL MICXL BF VUG H/TFRACS WTR TR YL FLU
349	4758.0-59.0	13.00	4.10	5.1	3.6	56.8	2.81	DOL MICXL BF VUG TO PPP SCAT BO ANHY FD FRACS SCAT YL FLU
350	4759.0-60.0	3.70	0.07	4.7	12.0	55.9	2.83	DOL MICXL BF VSCAT PPP BO ANHY FD FRACS SPT YL FLU
351	4760.0-61.0	28.00	8.00	8.6	15.5	39.6	2.83	DOL VFXLN BF PPP SM ANHY YL FLU
352	4761.0-62.0	28.00	7.20	9.0	17.0	39.9	2.83	DOL VFXLN BF PPP SM ANHY YL FLU
353	4762.0-63.0	26.00	8.00	11.5	20.0	36.3	2.83	DOL VFXLN BF VSSDY SM ANHY PPP SPT YL FLU
354	4763.0-64.0	22.00	9.50	10.6	16.3	37.4	2.82	DOL VFXLN BF SSDY PPP SCAT VUG SM ANHY YL FLU
355	4764.0-65.0	4.00	4.00	11.3	16.1	38.2	2.82	DOL VFXLN BF VUG TO PPP H/TFRACS ANHY SPT YL FLU
356	4765.0-66.0	17.00	PLUG	12.1	16.7	37.9	2.81	DOL VFXLN BF VUG TO PPP VTFRAC SM ANHY SPT YL FLU
357	4766.0-67.0	17.00	PLUG	13.1	23.0	37.7	2.81	DOL VFXLN BF PPP SCAT SDY VTFRAC YL FLU
358	4767.0-68.0	0.56	PLUG	12.6	24.7	36.3	2.81	DOL VFXLN BF PPP SCAT SDY VTFRAC YL FLU
359	4768.0-69.0	39.00	13.00	12.3	16.1	39.9	2.83	DOL VFXLN BF PPP SCAT SDY SH STY YL FLU
360	4769.0-70.0	10.00	8.90	12.6	20.2	37.7	2.82	DOL OOL SSDY VUG TO PPP GILSONITE SCAT YL FLU
361	4770.0-71.0	5.40	4.00	13.1	17.4	35.4	2.82	DOL VFXLN SSDY VUG TO PPP SM ANHY YL FLU
362	4771.0-72.0	270.00	6.80	15.3	12.9	39.1	2.81	DOL VFXLN SDY VUG FRACS SPT YL FLU
363	4772.0-73.0	30.00	28.00	14.6	11.9	34.9	2.81	DOL VFXLN SDY VUG FRACS SPT YL FLU
364	4773.0-74.0	9.70	6.90	15.6	15.2	33.0	2.81	DOL VFXLN SDY VUG FRACS SM ANHY SPT YL FLU
365	4774.0-75.0	5.50	3.00	16.2	23.4	34.1	2.82	DOL VFXLN SDY VUG FRACS SM ANHY SPT YL FLU
366	4775.0-76.0	41.00	38.00	18.1	31.8	31.4	2.82	DOL VFXLN SDY VUG DOL VFG SDY YL FLU
367	4776.0-77.0	34.00	15.00	15.8	23.5	36.0	2.82	DOL VFG SDY SCAT VUG PPP SM ANHY YL FLU
368	4777.0-78.0	28.00	14.00	15.3	26.9	33.0	2.83	DOL FG SDY ANHY SCAT VUG PPP YL FLU
369	4778.0-79.0	19.00	12.00	14.7	32.4	34.6	2.82	DOL VFXLN BRN SSSY SCAT SSDY YL FLU
370	4779.0-80.0	4.50	PLUG	12.0	29.8	38.0	2.82	DOL VFXLN BRN SSSY SCAT SSDY YL FLU
371	4780.0-81.0	6.20	3.00	10.6	22.2	42.8	2.78	DOL VFXLN BLK GILSONITE PPP SH STY DK FLU
372	4781.0-82.0	7.30	0.80	3.6	13.1	61.1	2.80	DOL VFXLN GY B WTR/O SCAT VUG SH STY SPT YL FLU
373	4782.0-83.0	1.00	0.83	4.8	9.8	65.1	2.82	DOL VFXLN GY VTFRACS BO SCAT VUG SPT YL FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



PHILLIPS PETROLEUM COMPANY
M. E. HALE #18
VACUUM UNIT
LEA COUNTY, NEW MEXICO

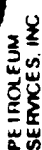
DATE: FEBRUARY 23, 1983
FORMATION: GRAYBURG SAN ANDRES
DRLG. FLUID: BRINE

FILE NO: 3120112
ANALYST: MANN
LABORATORY: MIDLAND

WHOLE CORE ANALYSIS

SMPL NO	DEPTH FEET	HORZ MAX	PERM MD 90°	POR %	OIL% PORE	WTR% PORE	GRN DENS	FORMATION DESCRIPTION
374	4783.0-84.0	29.00	17.00	7.5	16.6	56.2	2.81	DOL VFXLN WH SCAT OSTN SCAT VUG TO PPP SPT YL FLU
375	4784.0-85.0	37.00	PLUG	13.5	15.8	38.6	2.82	DOL VFXLN SSDY PPP SM ANHY YL FLU
376	4785.0-86.0	16.00	8.80	15.9	29.0	32.6	2.83	DOL VFXLN SSDY PPP SM ANHY YL FLU
377	4786.0-87.0	27.00	8.00	14.8	19.0	42.5	2.84	DOL VFXLN SSDY VUG TO PPP SM ANHY YL FLU
378	4787.0-88.0	61.00	11.00	16.8	14.6	43.9	2.83	DOL VFXLN SSDY VUG TO PPP SM ANHY YL FLU
379	4788.0-89.0	15.00	12.00	16.7	14.3	39.8	2.81	DOL VFXLN SCAT SSDY SCAT SH VUG SPT YL FLU
380	4789.0-90.0	11.00	9.10	18.0	26.0	33.6	2.84	DOL VFXLN SDY VUG SM ANHY YL FLU
381	4790.0-91.0	26.00	12.00	18.1	24.0	30.2	2.82	DOL VFXLN SDY VUG GD PPP YL FLU
382	4791.0-92.0	24.00	PLUG	18.6	16.3	32.9	2.83	DOL VFXLN SDY VUG GD PPP YL FLU
383	4792.0-93.0	21.00	20.00	18.1	14.7	34.7	2.83	DOL VFXLN SDY VUG GD PPP YL FLU
384	4793.0-94.0	27.00	PLUG	17.7	11.9	36.4	2.84	DOL VFXLN SDY/GILSONITE VUG TO PPP SPT YL FLU
385	4794.0-95.0	2.10	2.00	14.2	12.3	36.4	2.80	DOL VFXLN SDY/GILSONITE VUG TO PPP SPT YL FLU
386	4795.0-96.0	0.64	PLUG	11.2	19.6	33.1	2.81	DOL VFXLN SDY VUG/GILSONITE VTFRAC SPT YL FLU
387	4796.0-97.0	0.32	PLUG	9.3	14.1	38.8	2.82	DOL VFXLN SDY VUG/GILSONITE VTFRAC SPT YL FLU
388	4797.0-98.0	1.00	PLUG	6.1	16.9	51.3	2.82	DOL MICXL VUG ANHY FD FRACS VSPTY YL FLU
	4798.0-99.0							DOL MICXL VUG ANHY FD FRACS BKN FRACS VSPTY YL FLU - BKN/NA
389	4799.0-4800.0	2.81	PLUG	4.0	14.7	50.9	2.81	DOL MICXL GY H/VTFRACS SCAT VUG SPT FLU
390	4800.0-01.0	4.60	PLUG	6.7	11.7	60.0	2.82	DOL MICXL GY H/VTFRACS SCAT VUG SPT FLU
391	4801.0-02.0	1.80	PLUG	4.8	10.6	49.1	2.81	DOL MICXL GY H/VTFRAC SCAT VUG SPT FLU
392	4802.0-03.0	0.35	PLUG	3.7	13.4	45.3	2.82	DOL MICXL GY H/VTFRACS SCAT VUG SPT FLU

The interpretations or opinions expressed represent the best judgment of ERCO Petroleum Services, Inc. and it assumes no responsibility and makes no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well. These analyses, opinions or interpretations are based on observations and materials by the client for whom this report is made.



AGG	- Aggregate	ERTY	- Earthy	LMY	- Limy	S	- Slightly	WH	- White
ANG	- Angular	F	- Fine Grained	LS	- Limestone	SAT	- Saturated	W/	- With
ANHY	- Anhydrite, Anhydritic	FG	- Fair	LT	- Light	SCAT	- Scattered	WSPS	- Wisps
ARG	- Argillaceous	FR	- Fair	LTG	- Lithographic	SD	- Sand	WTR	- Water
ARK	- Arkose, Arkosic	FD	- Filled			SS	- Sandstone	WXY	- Waxy
ASHY	- Ashy	FIS	- Fissile	M	- Medium	SDY	- Sandy		
ASPH	- Asphalt, Asphaltic	FKY	- Flaky	MDST	- Mudstone	SFT	- Soft	XBD	- Crossbedded
BAND	- Band, Banded	FLU	- Fluorescence	MG	- Medium Grained	SH	- Shale	XLN	- Crystalline
BLUE	- Blue	FOSS	- Fossil, Fossiliferous	MICA	- Mica, Micaceous	SHY	- Shaly		
BENT	- Bentonite, Bentonitic	FNLY	- Finely	MICXL	- Micro crystalline	S/P	- Shale Parting	YL	- Yellow
BIOT	- Biotite	FRI	- Friable	MIN	- Mineral	SID	- Siderite, Sideritic		
BLACK	- Black	FRAC	- Fracture, Fractured	MRL	- Marl	SL	- Silica		
BLEED	- Bleeding Oil	FRAG	- Fragment	MLY	- Marly	SLC	- Siliceous		
BROWN	- Brown	FRM	- Firm	MNY	- Many	SILT	- Siltstone		
BRECCIA	- Breccia	FT	- Faint	MOTT	- Mottled	SKS	- Silkenstone		
BRECCIA	- Breccia	FXLN	- Finely Crystalline	MTX	- Matrix	SLTY	- Silty		
BRECCIA	- Breccia	G	- Grain, Grained	N	- No	SM	- Small		
BRECCIA	- Breccia	GO	- Good	NA	- No Analysis	SMP	- Sample		
BRECCIA	- Breccia	GM	- Gram	NOD	- Nodular	SPT	- Spot, Spotted		
BRECCIA	- Breccia	GLAUC	- Glauconite, Glauconitic	NS	- No Show	SRTD	- Sorted		
BRECCIA	- Breccia	GLD	- Gold	O	- Oil	SSHV	- Slightly shaly		
BRECCIA	- Breccia	GN	- Green	OD	- Odor	SSLTY	- Slightly silty		
BRECCIA	- Breccia	GO	- Gas Odor	OP	- Opaque	STRV	- Stringers		
BRECCIA	- Breccia	GRAN	- Granular	OOC	- Oolitic	STN	- Stain		
BRECCIA	- Breccia	GY	- Gray	OOL	- Oolite, Oolitic	STKS	- Streaks		
BRECCIA	- Breccia	GYP	- Gypsum, Gypsiferous	OOLMLDC	- Oolomoldic	STY	- Stylolitic		
BRECCIA	- Breccia	H	- Horizontal	ORNG	- Orange	SUC	- Sucrosic		
BRECCIA	- Breccia	HD	- Hard	ORG	- Organic	SUL	- Sulphur		
BRECCIA	- Breccia	HEM	- Hematite	P	- Poor	SKEL	- Skeletal		
BRECCIA	- Breccia	HFAC	- Horizontal Fracture	PA	- Pale	THK	- Thick		
BRECCIA	- Breccia	HI	- High	PEB	- Pebbles	THN	- Thin		
BRECCIA	- Breccia	IGN	- Igneous	PISO	- Pisolithic	TN	- Tan		
BRECCIA	- Breccia	INC	- Increase	PK	- Pink	TR	- Trace		
BRECCIA	- Breccia	IND	- Indurated	PP	- Pinpoint	TRIP	- Tripolite		
BRECCIA	- Breccia	INTBD	- Interbedded	PYR	- Pyrite, Pyritic	TX	- Texture		
BRECCIA	- Breccia	IPG	- Intergranular Porosity	PPP	- Pinpoint Porosity	UNCONS	- Unconsolidated		
BRECCIA	- Breccia	KAO	- Kaolinite	QZ	- Quartz	V	- Very		
BRECCIA	- Breccia	LAM	- Laminations, Laminated	QZQZ	- Quartzitic	VEINS	- Veins		
BRECCIA	- Breccia	LENT	- Lenticular	QZT	- Quartzite	VFG	- Very Fine Grained		
BRECCIA	- Breccia	LIG	- Lignite, Lignitic	RED	- Red	VFTX	- Very Fine Texture		
BRECCIA	- Breccia	LG	- Large	RDH	- Reddish	VTFAC	- Vertical Fracture		
BRECCIA	- Breccia	LM	- Lime	RK	- Rock	VFT	- Very Faint		
BRECCIA	- Breccia			RND	- Rounded	VIO	- Violet		
BRECCIA	- Breccia					VT	- Vertical		
BRECCIA	- Breccia					VUG	- Vuggy, Vuggy		
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								
BRECCIA	- Breccia								