



Client: Noble Energy
Project: Wells Ranch 30
Location: Gill, Co
Project No.: xxxx

Issue: 1
Rev: 0
Rev. Date: 24-Jul-14
By: JML
Approved: RES

PNEUMATIC TEST (IR-0373 Wells Ranch 30 PF Pipeline)

xxx	CLIENT: Noble Energy
TEST MEDIUM: Nitrogen	DATE: 2-Jul-14
TEST PRESSURE: 950	DESIGN PRESSURE: 855
TEST DURATION: 8 Hours	START TIME: 12:32:58
TEST PERFORMED BY: Silverline/PSI	STOP TIME: 3-Jul-14 0:03:23

TEST EQUIPMENT				
TYPE	MAKE	MODEL	SER#	CAL DATE
RECORDER	NV	10KPSI	256545	30-May-15
SCALE				
TEMP GAUGE				
PRESS GAUGE				

TIME	TEMP (°F)	AMBIENT	PRESSURE	COMMENTS
7/2/2014. 12:32:58	79.64		0	Started Recorder and Filling
7/2/2014. 12:50:23	80.8		251	Leveled off to allow for settling
7/2/2014. 13:00:53	81.04		250	Pressure up
7/2/2014. 13:16:38	80.86		504	Leveled off to allow for settling
7/2/2014. 13:35:18	83.22		501	Pressure up
7/2/2014. 13:50:18	85.41		751	Leveled off to allow for settling
7/2/2014. 14:24:48	86.57		745	Pressure up
7/2/2014. 14:38:43	84.18		948	Set Test
7/2/2014. 15:38:43	87.93		943	
7/2/2014. 16:38:43	87.15		941	
7/2/2014. 17:38:43	84.4		941	
7/2/2014. 18:38:43	80.58		940	
7/2/2014. 19:38:43	76.19		939	
7/2/2014. 20:38:43	71.09		939	
7/2/2014. 21:38:43	67.28		938	
7/2/2014. 22:38:43	64.82		938	
7/2/2014. 23:32:18	63.9		935	Broke Test
7/3/2014. 0:03:23	61.05		0	Blow Down Complete

8/1/2014

DATE

Robert E. Stutz

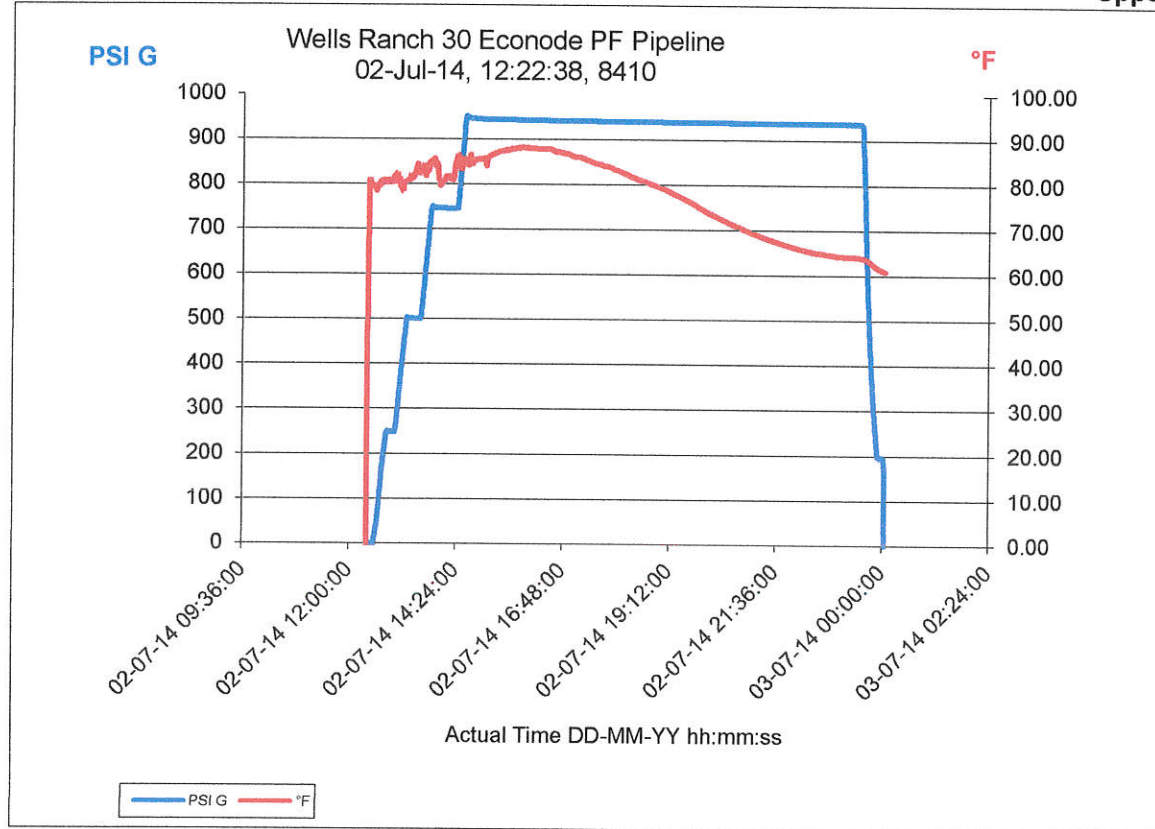
AUTHORIZATION

Data Collection Report

	Chassis	Left Scale	Right Scale
Serial Number	256545	254006	465794
Datatype		Lower	Upper
Units		PSI G	°F

Lower

Upper





APEX
INSTRUMENTS

7200 E. Dry Creek Rd. C-102
Centennial, Co. 80112
303-804-0667

cal.lab@apex-instruments.com

Silverline Services
1287 Diamond Drive
Windsor, CO 80550

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CALIBRATION CERTIFICATE: 5033

May 30 2014

Device Information:

Model
Manufacturer
Serial Number

DUT
nVision
Crystal Engineering
254006

Reference
RPM4-E-DWT
DH Instruments
1709

Pressure Range
Tolerance
Data Acquisition Mode
Date of Calibration
Calibration Due

0.000 to 10000.000
0.03 %FS + 0.1 %Rdg
RS232
May 30 2014
May 30 2015

0.000 to 10000.000
0.01 %Span
RS232
Sep 17 2013
Sep 17 2014

Test Information

Test Label 10,000PSI
Date May 30 2014
Time 8:41:10 AM
Operator Mark
Station ID APEXCALLAB-HP

Conditions

Ambient Pressure
Ambient Temperature 23° +/- 3.0° C
Ambient Relative Humidity 20% - 60%

As Received Data:

Test Point	Reference Pressure	DUT Pressure	DUT Raw Output	Abs. Error	"% Span" Error	DUT Tolerance	Status
	psi	psi	psi	psi	%	psi	
1	0	0.000	0.000	0.000	0.0000	3.000	Pass
2	2067	2066.995	2066.995	-0.005	0.0005	5.067	Pass
3	4001	4000.688	4000.688	-0.312	0.0008	7.001	Pass
4	6009	6008.962	6008.962	-0.038	0.0013	9.009	Pass
5	8072	8071.321	8071.321	-0.679	-0.0051	11.071	Pass
6	10041	10040.245	10040.245	-0.755	-0.0114	13.040	Pass
7	8029	8028.559	8028.559	-0.441	-0.0055	11.029	Pass
8	5981	5981.473	5981.473	0.473	0.0042	8.981	Pass
9	4006	4006.571	4006.571	0.571	0.0051	7.007	Pass
10	2050	2050.717	2050.717	0.717	0.0048	5.051	Pass
11	0	0.000	0.000	0.000	0.0000	3.000	Pass

As Received First Order Fit: $y = 1.000083E00x + -3.349545E-01$

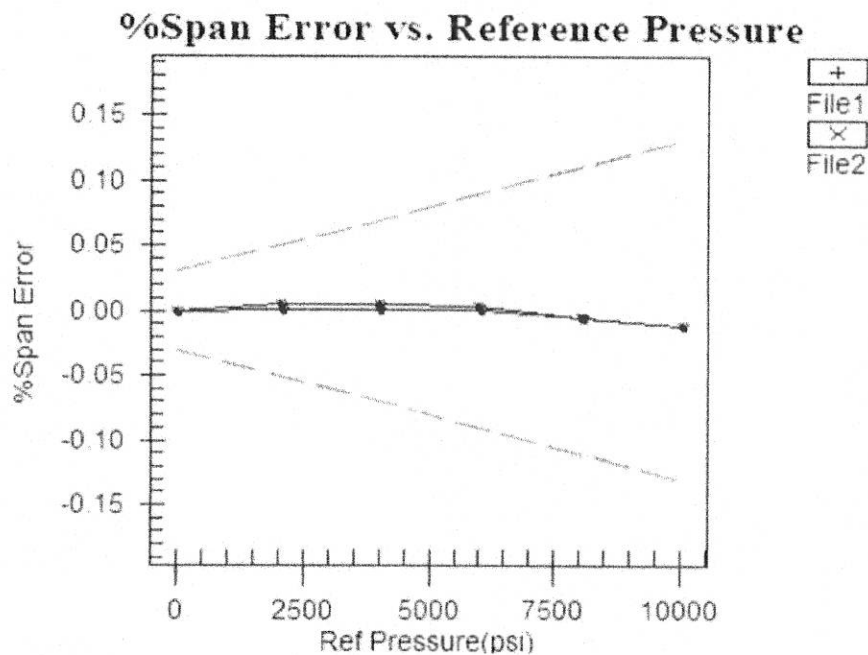
As Left Data:

Test Point	Reference Pressure	DUT Pressure	DUT Raw Output	Abs. Error	"% Span" Error	DUT Tolerance	Status
	psi	psi	psi	psi	%	psi	
1	0	0.000	0.000	0.000	0.0000	3.000	Pass

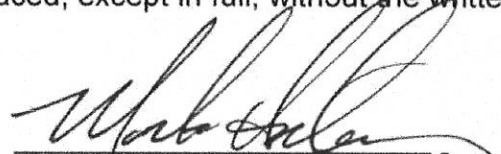
2	2067	2066.995	2066.995	-0.005	0.0005	5.067	Pass
3	4001	4000.688	4000.688	-0.312	0.0008	7.001	Pass
4	6009	6008.962	6008.962	-0.038	0.0013	9.009	Pass
5	8072	8071.321	8071.321	-0.679	-0.0051	11.071	Pass
6	10041	10040.245	10040.245	-0.755	-0.0114	13.040	Pass
7	8029	8028.559	8028.559	-0.441	-0.0055	11.029	Pass
8	5981	5981.473	5981.473	0.473	0.0042	8.981	Pass
9	4006	4006.571	4006.571	0.571	0.0051	7.007	Pass
10	2050	2050.717	2050.717	0.717	0.0048	5.051	Pass
11	0	0.000	0.000	0.000	0.0000	3.000	Pass

As Left First Order Fit: $y = 1.000083E00x + -3.349545E-01$

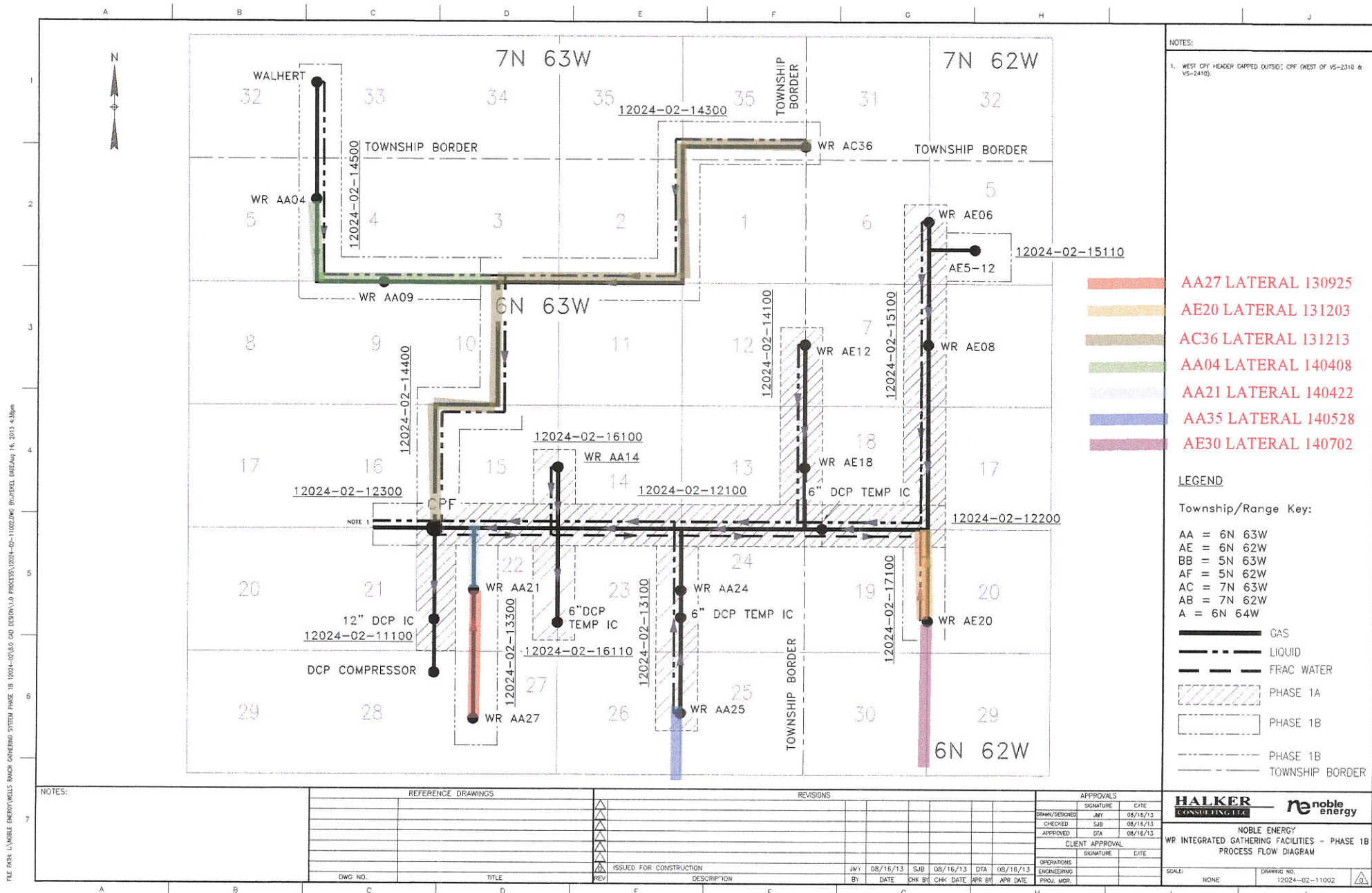
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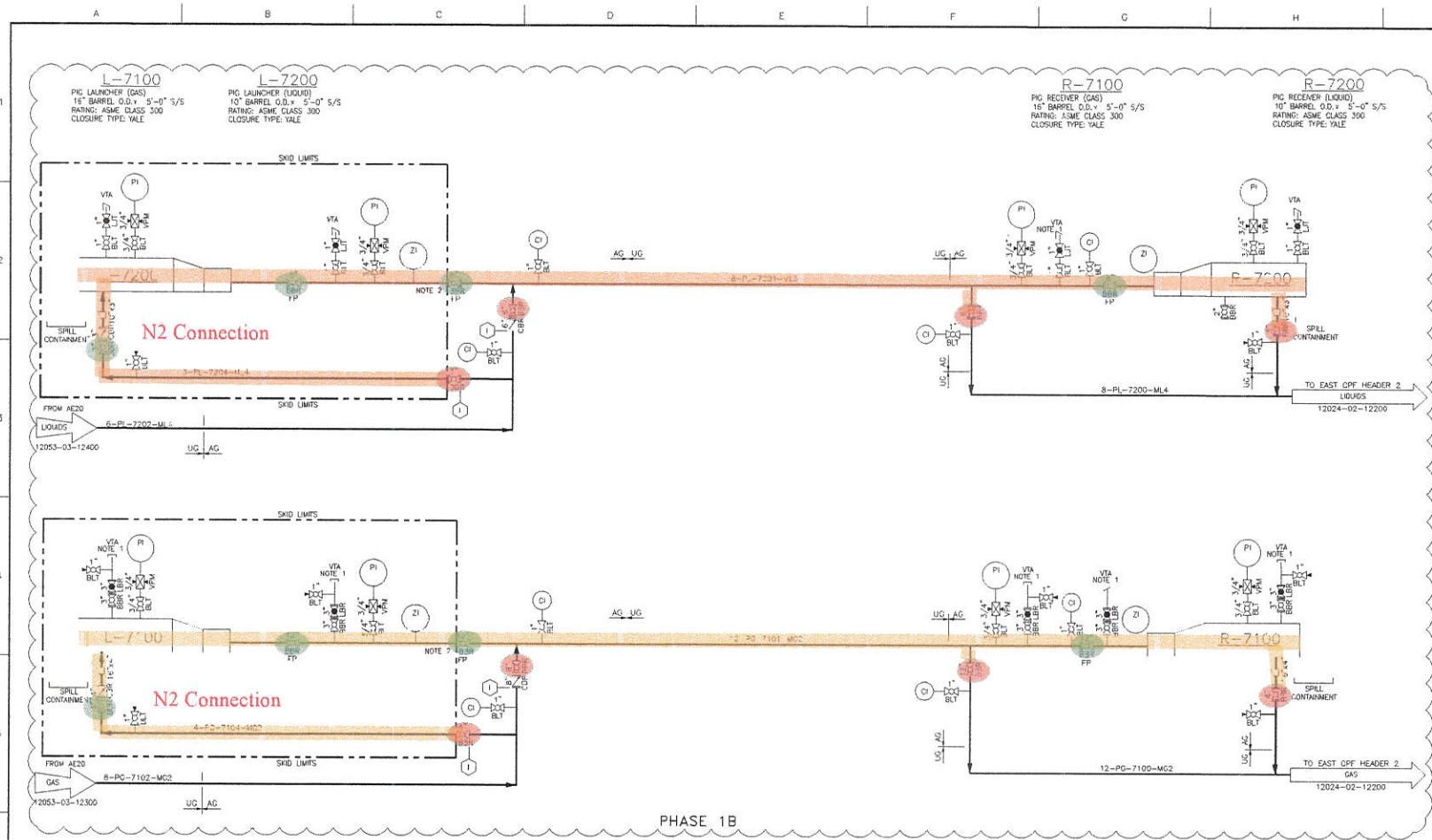


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 APEX Technician - Mark Hutchison

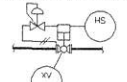
This Instrument has been calibrated using standards with accuracies traceable to the National Institute of Standards and Technology, derived from natural physical constants, derived from ratio measurements or compared consensus standards.





NOTES:

1. VENT DISCHARGE SHALL BE NO LOWER THAN 8'-0" FROM GRADE.
2. SKID MOUNTED LAUNCHER IS NOBLE UNIT. FLANGE SET IS THE TIE-POINT FOR FUTURE GATHERING SYSTEM EXPANSION.
3. FOR FUSIBLE PIPE, ALL ELBOWS SHALL HAVE A RADIUS NO LESS THAN 3 TIMES THE NOMINAL PIPE DIAMETER.
4. ALL WELDEES WILL BE BARRED TEES.
5. OLEATED.
6. PROVIDE FREEZE PROTECTION FOR ALL ABOVE GROUND FRAC WATER LINES.
7. LOCK CLOSED ALL BALL VALVES THAT ARE BLUNDED FOR FUTURE CONNECTION.
8. ALL BLIND FLANGES ARE TO HAVE A 1/2" NPT WITH 1/2" PLUGGED BALL VALVE.
9. PIPING SPECIFICATION MG3 SHALL BE USED FOR GAS SERVICE NEAR ROAD CROSSINGS.
10. ALL FP BALL VALVES LARGER THAN 12" SHALL BE ACTUATED. SEE DETAIL BELOW.



11. THE LOCATION AND FLOW DIRECTION OF GATHERING SYSTEM SHALL BE MARKED AT EACH MAIN LINE VALVE STATION AND LATERAL TIE-IN.

LEGEND

- PHASE 1A
- PHASE 1B
- ABANDONED IN PLACE

NOTES:	REFERENCE DRAWINGS		REVISIONS										APPROVALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	