

TEST SPECIFICATIONS						Date:		Select Routing:																									
Rangeview Pipeline Gathering System Hydrostatic Pressure Test						22-Sep-2016																											
Vail Well Connect						Test Number: 1		of 1																									
Project Name: Rangeview Pipeline Gathering System			Project I.D. / AFE Number 16W010A			Facility Name or Number Vail Well Connect																											
Installation Location (M.P. or S.S.): 0+00 to 52+48		State: CO	County/Parish: Weld		Class Location Designation	2	Selected Design Pressure	1480	Planned MAOP 1400																								
Project Description:																																	
Hydrostatic pressure test of the 4" well connect pipeline.																																	
Testing at 1.25*MAOP = 1850 minimum test pressure. 2219 psig Target Test Pressure at Chart Location Max Test Pressure for ANSI 600 Valves and Fittings is 2660 psig where they are located.																																	
Test shall be compliant with all test specifications in Exhibit D "Pipeline Construction Specifications" and all other Construction Documents.																																	
LEAK ONLY TEST <input type="checkbox"/> STRENGTH TEST <input checked="" type="checkbox"/> FABRICATION <input type="checkbox"/> NEW CONSTRUCTION <input checked="" type="checkbox"/> REPLACEMENT <input type="checkbox"/> RETEST <input type="checkbox"/> REFERENCE DRAWINGS ATTACHED <input type="checkbox"/>																																	
POST-INSTALLATION TEST <input checked="" type="checkbox"/> PRE-INSTALLATION TEST <input type="checkbox"/>																																	
Test Design Criteria					Test Section - Reference Data																												
Minimum Component Characteristics			Test Pressure Calculations																														
Pipe Information			<input type="checkbox"/> Input minimum and maximum pressure of test <input type="checkbox"/> Input minimum and maximum %SMYS of test			Test Medium: Water Test Duration: 8 Hours (min) Section Length: 5,248 Ft. Section Fill Volume: 4,336 Gal Max. Elevation Change: 67 Ft.																											
Valve/Flange ANSI Class Rating 600# Valves/Fittings			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pressure (psig)</th> <th>% PIPE SMYS</th> </tr> </thead> <tbody> <tr> <td>Max. Test Pressure (Pipe)</td> <td>2571</td> <td>59.2%</td> </tr> <tr> <td>Max. Test Pressure (Valves and Fittings)</td> <td>2660</td> <td>61.2%</td> </tr> <tr> <td>Min.</td> <td>1850</td> <td>42.6%</td> </tr> </tbody> </table>				Pressure (psig)	% PIPE SMYS	Max. Test Pressure (Pipe)	2571	59.2%	Max. Test Pressure (Valves and Fittings)	2660	61.2%	Min.	1850	42.6%	Station Equations: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Back</td> <td>0+00</td> <td>0+00</td> <td>0+00</td> </tr> <tr> <td>Ahead</td> <td>0+00</td> <td>0+00</td> <td>0+00</td> </tr> </tbody> </table>					1	2	3	Back	0+00	0+00	0+00	Ahead	0+00	0+00	0+00
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Ahead	0+00	0+00	0+00																														
Test Pressures																																	
Location	Station	Elevation (feet)	Max. psig.	% SMYS @ Max.	Min. psig.	% SMYS @ Min.	Variance psig.	Target psig.	% SMYS @Target																								
BEGIN -	0+00	4867	2,566	59.1%	1,874	43.1%	692	2,219	51.1%																								
HIGH ELEVATION	52+48	4922	2,542	58.5%	1,850	42.6%	692	2,195	50.5%																								
LOW ELEVATION	1+91	4855	2,571	59.2%	1,879	43.2%	692	2,225	51.2%																								
END	52+48	4922	2,542	58.5%	1,850	42.6%	692	2,195	50.5%																								
Chart Location (Test Point)	0+00	4867	2,566	59.1%	1,874	43.1%	692	2,219	51.1%																								
REMARKS:																																	
ASME B16.5 2.6 System Hydrostatic Testing 2003: Flanged joints and flanged fittings may be subjected to system hydrostatic tests at a pressure of 1.5 times the 38°C (100°F) rating rounded off to the next higher 1 bar (25 psi) increment. Testing at any higher pressure is the responsibility of the user, taking into account the requirements of the applicable code or regulation.																																	
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PRE-TEST SPECIFIED / REVIEWED BY:			TEST PERFORMED / ACCEPTED BY:			POST-TEST REVIEWED BY:																											
Originator (Signature)	Date:	Test Performed by (Signature):			Date:	Compliance (signature)		Date:																									
Designed Reviewed if applicable (Signature)	Date:	Company Name (for Contractor or for Employee):			Date:	Engineering or Operations (Signature)		Date:																									
Compliance (Signature)	Date:	Witnessed & Accepted by Company Representative:			Date:	Actual MAOP																											



April 2006

MOP Establishment and Pressure Testing of Pipelines
TG1601.190

PAGE 1 OF 9

LIQUID PIPELINE
PRESSURE TEST
REPORT

Pressure Test Number 1

MOP of tested facility is PSIG

Company: NORTHWINDS

Operations Area: _____

Project: VAIL/CUB CREEK

AFE: 16W010A

Pipeline: 4" WELL CONNECT

Section: _____

Station or Milepost From: 0+00

To: 52+48



INSTRUCTIONS

In this worksheet, cells containing formulas are protected against input.
Cells with **BLUE** text labels allow or require input.

<i>General Information</i>	<ul style="list-style-type: none"> • Complete this Report and attached necessary exhibits for all SBP installed pipelines or pipeline segments or those re-qualified for service. • Fill in all applicable information. If information is not applicable, write NA in the corresponding space on the Report.
<i>Pipe Data</i>	<ul style="list-style-type: none"> • Record the details for each pipe section tested, including lengths, line fill, pipe fittings, etc. • Add together pipe section lengths and line fill for a total pipe section length and line fill.
<i>Test Water Data</i>	<ul style="list-style-type: none"> • Enter water source information (i.e., from municipal supply, well, river, lake, pond) in the Test Log or notes section of the Report. • Source water temperature compared to ground temperature can assist with understanding the time for the water to stabilize.
<i>Pressure Calculations</i>	<ul style="list-style-type: none"> • Elevation of high and low points and the elevation of the test pressure measure sites is required for calculation of the target test pressures.
<i>Test Log</i>	<ul style="list-style-type: none"> • Fill out the Test Log at the time of the test. This is the actual log of the test. • From the start of filling the test section, record pressure readings from the calibrated test gauge or deadweight tester used in the test. • Record the test pressure and temperatures at intervals of 30 minutes to an hour and as necessary to represent the test pressure during the test period. • The below ground pipe temperature sensor should be placed away from exposed pipe and far enough from the water injection point so that water injected will not affect the readings. • In the Remarks column, enter start of test, end of test, and any remarks concerning unusual events, such as liquid added or withdrawn, weather conditions, etc.
<i>Notes</i>	<ul style="list-style-type: none"> • Enter all pertinent comments about the test, including such things as weather conditions, radical weather changes, equipment malfunctions, or any other noteworthy event that may affect testing.
<i>Profile</i>	<ul style="list-style-type: none"> • An elevation profile is required for any test section where the elevation varies more than 100 feet. The following items should be noted on the profile: <ul style="list-style-type: none"> - Location and elevation where test pressure measurements are taken - High and low points - Stationing or mileposts - Horizontal and vertical scale of the drawing • Elevation data is available in electronic format from the KPL mapping system. • If electronic elevation data is not available, take profile elevations from survey information or from U.S. Geological Service 7 1/2 minute topographical maps.
<i>Failure Log</i>	<ul style="list-style-type: none"> • Record each failure event that causes the line to be taken "off test". • Enter the date, time, and pressure at the time of failure. • List the apparent cause of the failure if the actual cause cannot be determined. Pipe seam failure or leaking flange, for example, could be entered as the cause of test failure. • Describe the repair method (i.e., changed-out pipe or tightened flange).
<i>Supplementary Documentation</i>	<ul style="list-style-type: none"> • Check each supplementary documentation attached as part of this test record (i.e., test charts and/or equipment certifications). • Write the corresponding Exhibit Number on the attached supplementary documentation.
<i>Certification</i>	<ul style="list-style-type: none"> • Signatures of the Company and Contractor representatives in charge of the test are MANDATORY.



PRESSURE CALCULATIONS

Location of Test Point <u>0+00</u>	Elevation of Test Point <u>4867</u> Ft. (Elevation) <u>0+00</u> Ft. (Station)	High Point <u>4922</u> Ft. (Elevation) <u>52+48</u> Ft. (Station) <u>VAIL WELL PAD</u> Location Name	Low Point <u>4855</u> Ft. (Elevation) <u>1+91</u> Ft. (Station) Location Name
Target MOP: Target Test Pressure Range 1st Min: <u>1850</u> Maximum: <u>2219</u> 2nd Min:	Test Duration: <u>8</u> hr High Point Low Point	Start Point <u>4867</u> Ft. (Elevation) <u>0+00</u> Ft. (Station) <u>VAIL/40 CONCRETE</u> Location Name	End Point <u>4922</u> Ft. (Elevation) <u>52+48</u> Ft. (Station) <u>VAIL WELL PAD</u> Location Name

TEST LOG

DATE	TIME	PRESSURE	AMBIENT TEMP	BELOW GROUND TEMP	ABOVE GROUND TEMP	REMARKS
9/30	6:15 AM	500	53	65	52	Stabilized from overnight
	6:20	0	53	65	52	BLEED DOWN TO 69 DUE TO HEAD PRESSURE
	6:41	69	54	65	52	PRESSURED UP TO 500 PSI
	6:44	503	54	65	52	CLOUDY HOLD FOR 15 MIN
	6:59	503	54	65	52	PRESSURE UP TO 1000 PSI
	7:03	1002	54	65	51	HOLD FOR 15 MIN CLOUDY
	7:14	1002	54	65	51	PRESSURE UP TO 1500 PSI
	7:16	1503	56	65	51	HOLD FOR 15 MIN CLOUDY
	7:31	1503	54	65	50	PRESSURED UP TO 2000 PSI
	7:33	2003	54	65	50	HOLD FOR 15 MIN CLOUDY, RAIN
	7:49	1995				CREW HAD TO SHUT IN VALVE AND BLOW LINE DOWN
		0				DUE TO LEAK ON ISOLATION KIT ON 4" RECEIVER.
	9:10	0	58	68	51	PRESSURING UP TO 500 PSI
	9:15	503	58	68	51	HELD FOR 15 MIN CLOUDY
	9:30	503	58	68	51	PRESSURING UP TO 1000 PSI
	9:31	1003	58	68	51	HELD FOR 15 MIN CLOUDY
	9:46	1003	58	68	51	PRESSURE UP TO 1500 PSI
	9:48	1503	58	68	51	HELD FOR 15 MIN CLOUDY
	10:03	1503	58	68	51	PRESSURE UP TO 2000 PSI
	10:04	2004	58	68	51	HELD FOR 15 MIN CLOUDY
	10:19	2004	58	68	51	PRESSURED UP TO
	10:20	2223	58	68	51	HELD FOR 15 MIN CLOUDY
	10:35	2223	58	68	51	ON TEST CLOUDY RAIN
	10:50	2224	60	68	51	CLOUDY, RAIN
	11:05	2223	60	68	51	CLOUDY, RAIN
	11:20	2223	60	68	51	CLOUDY, RAIN
	11:35	2223	60	68	51	PIPE TEMP RISING DUE TO HEATER PUT UNDER TARP
	11:50	2224	60	68	51	CLOUDY
	12:05 PM	2224	62	68	54	CLOUDY
	12:20	2225	62	68	54	CLOUDY, RAIN
	12:35	2227	62	68	54	CLOUDY, RAIN
	12:50	2228	64	68	54	CLOUDY
	1:05	2230	64	68	54	CLOUDY
	1:20	2231	64	68	54	CLOUDY
	1:35	2233	64	68	55	CLOUDY
	1:50	2233	64	68	57	PARTLY SUNNY
	2:05	2233	68	68	59	PARTLY SUNNY
	2:20	2233	72	68	59	SUNNY
	2:35	2232	72	68	59	SUNNY



TEST LOG (CONTINUED)

DATE	TIME	PRESSURE	AMBIENT TEMP	BELOW GROUND TEMP	ABOVE GROUND TEMP	REMARKS
9/30/16	2:50	2232	76	68	59	SUNNY, WINDY
	3:05	2232	76	68	60	SUNNY, WINDY
	3:20	2231	76	68	62	PARTLY CLOUDY
	3:35	2231	72	68	63	PARTLY CLOUDY OUTSIDE TEMP DROP
	3:50	2231	72	68	63	PARTLY CLOUDY
	4:05	2231	72	68	63	CLOUDY
	4:20	2231	72	68	64	Put heat back under tarp
	4:35	2232	72	68	66	CLOUDY
	4:50	2234	72	68	66	CLOUDY, TOOK heat off under tarp. Kept heat ON at last WIT.
	5:05	2235	72	68	66	Partly CLOUDY
	5:20	2236	72	68	66	SUNNY
	5:35	2236	72	68	66	SUNNY
	5:50	2236	72	68	66	SUNNY
	6:05	2237	72	68	66	SUNNY
	6:20	2238	70	68	66	SUN GOING DOWN
	6:35	2239	68	68	66	SUN IS DOWN
	6:50	2240	62	68	66	HELD PRESSURE FOR 15 MIN AFTER 8 hour test
	6:50	1993	62	68	66	bled DOWN TO 1993 PSI
	7:05	1993	56	68	63	bled DOWN TO 1993 PSI
	7:05	1497	56	68	63	HELD FOR 15 MIN
	7:20	1496	52	68	61	bled down to 993 PSI
	7:20	993	52	68	61	held for 15 MIN
	7:35	993	50	68	60	bled DOWN TO
	7:35	490	50	68	60	held FOR 15 MIN
	7:50	490	50	68	60	bled DOWN TO
	7:50	0	50	68	60	TEST IS COMPLETED



EQUIPMENT CALCULATED MOP SUMMARY WORKSHEET

1. Test Information:

Date _____ Time _____

Target MOP

Enter the desired MOP,
if less than pipe
internal design
pressure.

Test Point Location _____

Test Medium _____

Specific Gravity of Test Medium _____

Min. Test Press. at test site 125% of min. MOP + elev. _____

Maximum allowable % of SMYS = 100%

Test Duration _____

110%

2. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#1) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

3. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#2) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

4. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#3) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

5. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#4) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

6. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#5) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

7. Pipe Specifications:

Manufacture Type _____

Grade _____

Pipe (#6) O.D. _____

SMYS _____

Wall thickness _____

Length (ft.): _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Volume _____

Max allowable test pressure, psig _____

8. Pipe Fittings Specifications:

Manufacture Type _____

Grade _____

Fitting Description _____

Pipe Fitting O.D. _____

SMYS _____

Wall thickness _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Max allowable test pressure, psig _____

9. Pipe Fittings Specifications:

Manufacture Type _____

Grade _____

Fitting Description _____

Pipe Fitting O.D. _____

SMYS _____

Wall thickness _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Max allowable test pressure, psig _____

10. Pipe Fittings Specifications:

Manufacture Type _____

Grade _____

Fitting Description _____

Pipe Fitting O.D. _____

SMYS _____

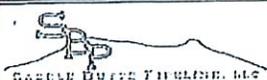
Wall thickness _____

MOP _____

Seam Joint Factor _____

Design Factor (F) _____

Max allowable test pressure, psig _____



EQUIPMENT CALCULATED MOP SUMMARY WORKSHEET
(continued)

11. Manufactured: _____ Weldolet, etc. O.D. _____ Working Pressure _____
Manufacture Type _____ Grade _____
Fitting Description _____
Max allowable test pressure, psig _____

12. Manufactured: _____ Pipe Flanges O.D. _____ Working Pressure _____
Manufacture Type _____ Class _____
Temperature Derating Factor (T) _____
Max allowable test pressure, psig _____

13. Manufactured: _____ Pipe Flanges O.D. _____ Working Pressure _____
Manufacture Type _____ Class _____
Temperature Derating Factor (T) _____
Max allowable test pressure, psig _____

14. Manufactured: _____ Block Valve Size _____ Working Pressure _____
Manufacture Type _____ Class _____
Temperature Derating Factor (T) _____
Max allowable test pressure, psig _____

15. Calculated MOPs (psi):
Test Pressure Range @Test Site, psig _____ 125% to psig _____ 110% to psig _____
Note: Add psi to min. test range
Maximum test pressure at test site, psig _____

CALCULATED TARGET MOP OF PIPELINE SECTION

PSIG



FAILURE LOG

FAILURE:

Date: _____ Time: _____ am / pm Failure Pressure: _____

Apparent Cause: _____

REPAIR:

Describe Repair Method: _____

FAILURE:

Date: _____ Time: _____ am / pm Failure Pressure: _____

Apparent Cause: _____

REPAIR:

Describe Repair Method: _____

FAILURE:

Date: _____ Time: _____ am / pm Failure Pressure: _____

Apparent Cause: _____

REPAIR:

Describe Repair Method: _____

FAILURE:

Date: _____ Time: _____ am / pm Failure Pressure: _____

Apparent Cause: _____

REPAIR:

Describe Repair Method: _____

FAILURE:

Date: _____ Time: _____ am / pm Failure Pressure: _____

Apparent Cause: _____

REPAIR:

Describe Repair Method: _____



The following marked exhibits are attached as a part of this Test Report:

- EXHIBIT NO. 1 Sketch of Tested Piping (Including how section is isolated), with material list
- EXHIBIT NO. 2 Profile of pipeline section and/or segment
- EXHIBIT NO. 3 Pressure Chart, with pressure test number, date, test section name, Inspector name and signature
- EXHIBIT NO. 4 Temperature Chart, with pressure test number, date, test section name, Inspector name and signature
- EXHIBIT NO. 5 Pressure Recorder Certification Papers
- EXHIBIT NO. 6 Temperature Recorder Certification Papers
- EXHIBIT NO. 7 Deadweight or Calibrated Test Gauge Certification Papers
- EXHIBIT NO. 8 Field test data log, if hand written
- EXHIBIT NO. 9 Pressure Test Procedure, if applicable, with MOP Area Representative and Engineer signature approval

CERTIFICATION

I certify this pipeline or pipeline section has been tested and successfully met the terms of SBP MOP Establishment and Pressure Testing of Pipelines Technical Guideline and, where applicable, the contract document between SBP and its prime contractor.

MOP Area Representative

By: _____ Date: _____
(Please print) (Signature)

Engineer

By: _____ Date: _____
(Please print) (Signature)

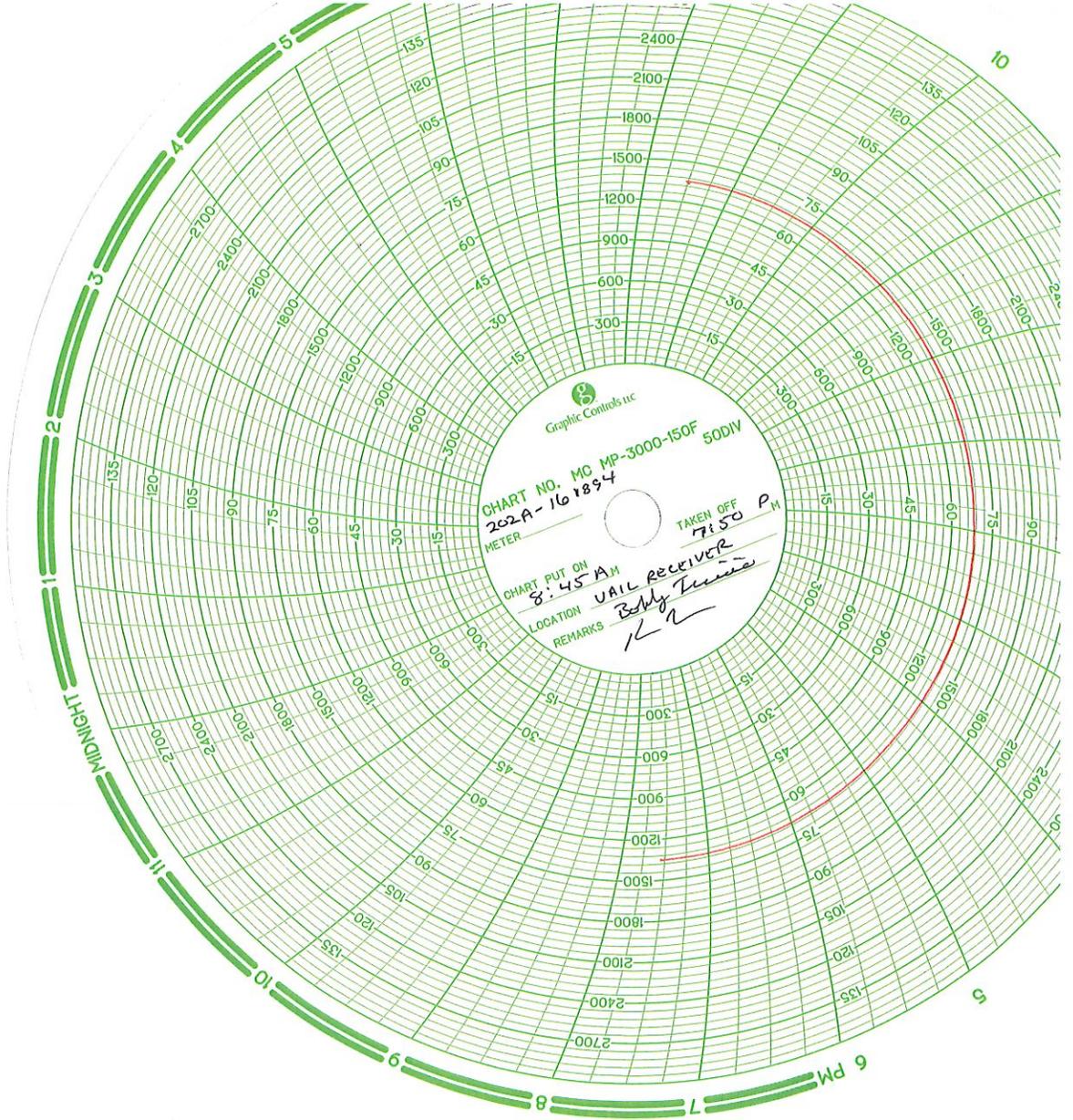
Inspector

By: Bobby Tricarico Bobby Tricarico Date: 9/30/16
(Please print) (Signature)

Name of Testing Contractor

NORTHWINDS

By: Dirk Rich _____ Date: 9/30/16
(Please print) (Signature)



Northwinds
1374937



7200 E. Dry Creek Rd. C-102
Centennial, Co. 80112
303-804-0667
cal.lab@apex-instruments.com

Pipeline Supply & Service
9700 E. 104th Ave, Unit F
Henderson, CO 80640

Page 1

CALIBRATION CERTIFICATE: 10421

Apr 29 2016

Device Information:	DUT	Reference
Model	XP2i	RPM4-E-DWT
Manufacturer	Crystal Engineering	Fluke
Serial Number	364359	1709
Pressure Range	0.000 to 5000.000	0.000 to 15000.000
Tolerance	0.02 %FS : < 20% FS 0.1 %Rdg : > 20% FS	0.02% Rdg or 0.002% Span
Data Acquisition Mode	RS232	RS232
Date of Calibration	Apr 29 2016	Oct 23 2015
Calibration Due	Apr 29 2017	Oct 23 2016

Test Information

Test Label	5,000 psi	Conditions	
Date	Apr 29 2016	Ambient Pressure	
Time	12:31:27 PM	Ambient Temperature	23 deg C +/- 3 C
Operator	Steven L.	Ambient Relative Humidity	20% - 60%
Station ID	CALLABHP3-HP		

As Received Data:

Test Point	Reference Pressure psi	DUT Pressure psi	DUT Raw Output psi	Abs. Error psi	"% Span" Error %	DUT Tolerance psi	Status
1	-0.01	-0.002	-0.002	0.008	0.0001	1.000	Pass
2	1001.40	1001.190	1001.190	-0.210	-0.0042	1.001	Pass
3	1999.44	1999.011	1999.011	-0.429	-0.0085	1.999	Pass
4	3001.76	3001.184	3001.184	-0.576	-0.0115	3.001	Pass
5	4002.18	4001.453	4001.453	-0.727	-0.0146	4.001	Pass
6	5000.72	4999.851	4999.851	-0.869	-0.0175	5.000	Pass
7	3997.29	3996.576	3996.576	-0.714	-0.0143	3.997	Pass
8	2999.21	2998.807	2998.807	-0.403	-0.0080	2.999	Pass
9	1999.21	1999.041	1999.041	-0.169	-0.0034	1.999	Pass
10	999.02	998.981	998.981	-0.039	-0.0008	1.000	Pass
11	-0.03	0.188	0.188	0.218	0.0043	1.000	Pass

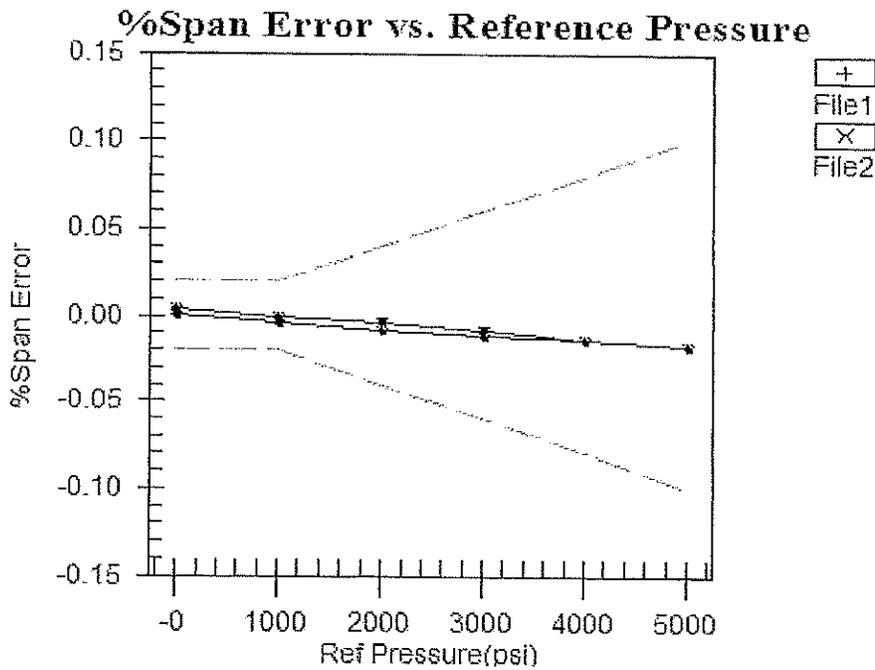
As Received First Order Fit: $y = 1.000199E00x + -9.655745E-02$

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	-0.01	-0.002	-0.002	0.008	0.0001	1.000	Pass
2	1001.40	1001.190	1001.190	-0.210	-0.0042	1.001	Pass
3	1999.44	1999.011	1999.011	-0.429	-0.0085	1.999	Pass
4	3001.76	3001.184	3001.184	-0.576	-0.0115	3.001	Pass
5	4002.18	4001.453	4001.453	-0.727	-0.0146	4.001	Pass
6	5000.72	4999.851	4999.851	-0.869	-0.0175	5.000	Pass
7	3997.29	3996.576	3996.576	-0.714	-0.0143	3.997	Pass
8	2999.21	2998.807	2998.807	-0.403	-0.0080	2.999	Pass
9	1999.21	1999.041	1999.041	-0.169	-0.0034	1.999	Pass
10	999.02	998.981	998.981	-0.039	-0.0008	1.000	Pass
11	-0.03	0.188	0.188	0.218	0.0043	1.000	Pass

As Left First Order Fit: $y = 1.000199E00x + -9.655745E-02$



This calibration report shall not be reproduced, except in full, without the written approval of the issuer.

SL
 APEX Technician - Steven Laupan

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.

PSS-COMPANIES



9700 E. 104TH AVE, UNIT F- HENDERSON, CO 80640 - Phone (303)857-7986 - Fax (303)389-4945

CALIBRATION CERTIFICATE

CERTIFICATE NUMBER: CO

Details +/-: 1.0% ACCURACY

DATE CALIBRATED: 04/12/2016
DUE DATE: 04/12/2017

INDICATED TEMPERATURE RANGE: # 0 – 150°F
INDICATED PRESSURE RANGE: #0 – 3000 PSI
SERIAL NO: 202A-161894
MANUFACTURER: BARTON/ 12" RECORDER

TYPE OF INSTRUMENT CALIBRATED: TEMPERATURE / PRESSURE RECORDER

INSTRUMENT FINDINGS/STATUS: UNIT IS IN TOLERANCE/ INSTRUMENT MEETS OR EXCEEDS SPECIFICATIONS.

BASED ON INTERNATIONAL STANDARDS OF GRAVITY: (980.665 cm./sq.).

TYPE OF STANDARD USED TO CALIBRATE: REFINERY DEADWEIGHT TEST UNIT SPT. (35225-3) SERIAL No. 5268: KESSLER TEST THERMOMETERS; SERIAL NO, CALIBRATION DATE: SEPTEMBER 14, 2015

ALL STANDARD DIRECTLY TRACEABLE TO NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGIES TEST NO: (N.I.S.T.) 2.6/172490 & 6.6/139577.

CALCULATED USING MASS VALUES, AREA, AO, AND STATED GRAVITY.
ROOM TEMPERATURE/HUMIDITY (AT TIME OF TEST): 66°F / 25%.

CALIBRATED BY: NICK BEDFORD

A handwritten signature in black ink, appearing to read 'Nick Bedford', written over a horizontal line.

P-S-S-COMPANIES



9700 E. 104TH AVE, UNIT F- HENDERSON, CO 80640 - Phone (303)857-7986 - Fax (303)389-4945

CALIBRATION CERTIFICATE

CERTIFICATE NUMBER: CO

Details +/-: 1.0% ACCURACY

DATE CALIBRATED: 06/24/2016

DUE DATE: 06/24/2017

INDICATED TEMPERATURE RANGE: # 0 – 150°F

INDICATED PRESSURE RANGE: #0 – 3000 PSI

SERIAL NO: 202E-007

MANUFACTURER: BARTON/ 12" RECORDER

TYPE OF INSTRUMENT CALIBRATED: TEMPERATURE / PRESSURE RECORDER

INSTRUMENT FINDINGS/STATUS: UNIT IS IN TOLERANCE/ INSTRUMENT MEETS OR EXCEEDS SPECIFICATIONS.

BASED ON INTERNATIONAL STANDARDS OF GRAVITY: (980.665 cm./sq.).

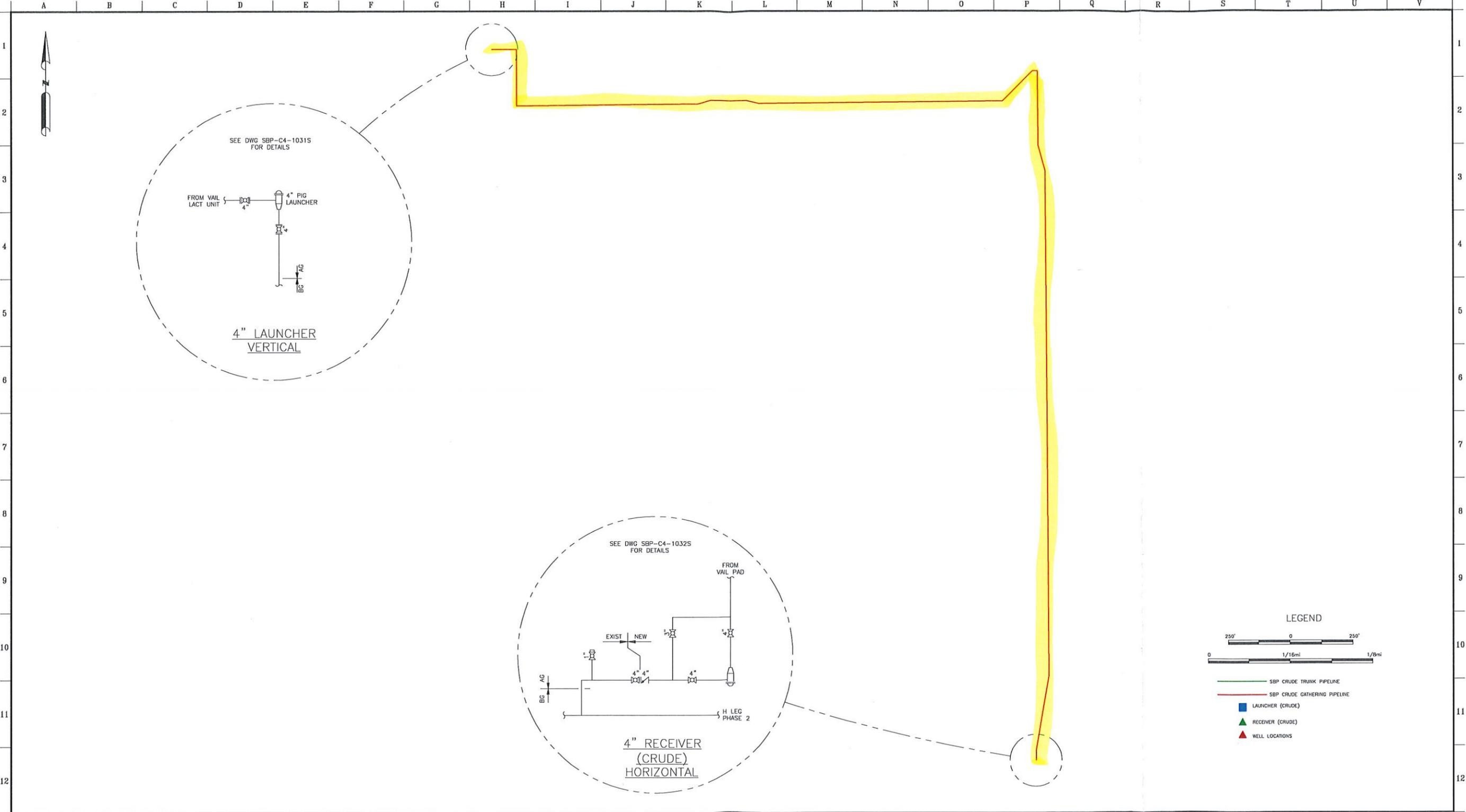
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ROOM TEMPERATURE/HUMIDITY (AT TIME OF TEST): 66°F / 25%.

CALIBRATED BY: NICK BEDFORD





LEGEND

0 250' 0 250'

0 1/16mi 1/8mi

- SBP CRUDE TRUNK PIPELINE
- SBP CRUDE GATHERING PIPELINE
- LAUNCHER (CRUDE)
- ▲ RECEIVER (CRUDE)
- ▲ WELL LOCATIONS

NOTE:
 1. FLOW SCHEMATIC IS FOR GRAPHICAL REPRESENTATION ONLY.
 2. ALL GAS, WATER, AND UTILITY LINES SHOULD BE LOCATED PRIOR TO ANY EXCAVATING, TRENCHING OR DIGGING ANYWHERE ON OR NEAR THIS SITE.

REFERENCE DRAWINGS		REVISIONS				ENGINEERING RECORD		
NO.	TITLE	NO.	FIRM	DATE	DESCRIPTION	BY	CHK.	APP.
		B	SESI	09/22/16	ISSUED FOR REVIEW	PDE		

BY	DATE
DRN: PDE	09/22/16
DES:	
CHK:	
APP:	
AFE No.	
SE&C JOB NO.	
PROJ. ENGR:	
SCALE: AS NOTED	

SADDLE BUTTE
 PIPELINE
 FLOW SCHEMATIC
 VAIL WELL CONNECT

PLOT SCALE: CAD NO. SB_VAIL_WC

DWG. NO. SB VAIL WC

REV B