Flares -2 and -3

Dehydrators -1, -2, -3 and Bypass-1

CPMS Site-Specific Monitoring Plan

and

Performance Evaluation Test Plan

for

Robinson Lake Gas Plant

Prepared for Compliance with Requirements in the

2022 EPA Region 8 Consent Decree and MACT Subpart HH Rule

January 2024

R1 Submittal 4.30.24

Revision Log

Revision Number	Description	Date	Name
0	Plan Approved by EPA Region 8	*02.16.2024*	J Waddell
1	Tables 1a, b, and c, flow chart updates, and performance evaluation updates		Cristy Jones

Note: Each time a revision is completed, log the revision description and number into this log.

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Introduction

MPLX G&P(MPLX)-Robinson Lake Gas Plant, has prepared this Site-Specific Monitoring Plan (Monitoring Plan) and Performance Evaluation Test Plan (Test Plan) as required by 40 Code of Federal Regulations (CFR) § 63.773(d)(1)(ii) (Subpart HH) and § 63.8 (General Provisions), to fulfill the requirements of the 2022/2023 Consent Decree, Paragraph 27 (CD). The Test Plan is found in Appendix A.

MPLX has installed a Continuous Parameter Monitoring System (CPMS) for Flare 2 [control device for the triethylene glycol (TEG) dehydrator 3] and Flare 3 [control device for the Ethylene Glycol (EG) dehydrators 1 and 2] to comply with the dehydration unit Maximum Achievable Control Technology (MACT) requirements of Subpart HH (40 CFR § 63.771). In addition, and as required by the CD, MPLX has installed programming to control operation of the TEG pumps (Dehydrator 3) and Hot Oil XV's (Dehydrator 1 and 2) to reduce emissions whenever the Flare-3 and/or Flare-2 pilot is off or when the dehydration system over-pressurized. Additionally, a bi-directional line is located between Flare 2 and Flare 3, allowing redundant means for air pollution control (see Section 2.3).

The overall objective of the plan is to ensure that the sensors and systems that comprise the CPMS are operating correctly and accurately. Adherence to this plan ensures the data collected, as required by the MACT HH rule and CD, are suitable for use in determining compliance with the limitations set forth in the rule and CD.

The CPMS is always operational, including periods of startup, shutdown, or malfunction. The CPMS has a heat sensing monitoring system that measures and records the time pilot temperature of the flares and indicates the continuous ignition of the pilot flames. The CPMS also continuously monitors the status of the Dehy-1 and Dehy-2 Hot Oil XV's and Dehy-3 TEG pump. The CPMS is installed, operated, and maintained according to the procedures in this plan.CD Paragraph 27.a provides the requirements for this Plan, specifically:

Site-Specific Monitoring Plan. Within 30 Days of the Effective Date, MPLX shall submit a Monitoring Plan for Robinson Lake Gas Plant Dehydrators-1, -2, and -3 and Flares-2 and -3, to the EPA for approval, in consultation with NDDEQ. MPLX may update or revise the monitoring plans, as appropriate, and shall submit revisions to EPA for re-approval in the next Semi-Annual Report. MPLX must implement the Monitoring Plans by the training implementation deadline set forth in Paragraph 27b, within 60 days of receipt of the EPA's approval of the training plan for Robinson Lake. The Monitoring Plans shall specify each CPMS's design, data collection, and quality assurance and control procedures in accordance with 40 C.F.R. § 63.773(d)(1)(ii) and 40 C.F.R. § 63.8(d). Note that MPLX may revise this Plan, as needed, with the approval of EPA.

Table 1 summarizes the CPMS system components at the facility.

Design

Flare Temperature Monitoring

MPLX installed temperature monitoring equipment that is of industry standard and/or industry accepted design. Manufacturer's specifications or recommendations for installation, operation, and calibration of the equipment were followed (see Appendix G for details). The temperature monitoring equipment includes thermocouples, thermo-well, temperature controllers, and temperature

transmitting devices. The system measures the flare pilot temperature and then transmits that data to the company's data management system. The temperature monitoring devices are installed and operated per the manufacturer's recommendations. The temperature monitoring devices have a maximum tolerance of ±3% span. The temperature transmitters operate in a range from -40 to 2600°F.

The data collected from the temperature monitoring devices is transmitted to the data management system via industry standard equipment. The temperature reading is coming from the thermocouple to a temperature transmitter, and the transmitter is sending a 4-20mA signal to the Program Logic Controller (PLC). It is recorded and retrievable with the PI database system; see Section 3 (tag: TT_8510.PV, TT_8510A.PV, TIT_9910.PV, and TIT_9910A.PV)

The thermocouples are in proximity to the flares pilot flame such that the temperature reading is a representative measurement of the pilot temperature. Installation follows best engineering and/or best industry practices (see Appendix G for details).

1.1.1. Dehydration Pressure Monitoring

The pressure indicators PIT 3810 (Dehy-1), PIT 7470 (Dehy-2), and PIT 8100 (Dehy-3), are monitoring reboiler or dehydration pressure to ensure flow path to flares. These pressure indicators are set to shutdown dehydrators at relief valve set pressure.

The data collected from the Dehydrator-1, and/or -2, monitoring devices is transmitted to the data management system via industry standard equipment. The controller receives an electronic signal from the actuator on each XV valve indicating if it is opened or closed. Installation follows best engineering and/or best industry practices. The status of Dehydrator 3 is monitored via Flow transmitter.

1.1.2. Bypass-1

A bi-directional line (Bypass-1) between Flare 2 and Flare 3 is car seal closed (CSC) with a three-inch ball valve (620100). Under normal operating conditions the CSC isolation valve prevents gas from flowing to each flare simultaneously by isolating TEG (Dehy 3) reboiler emissions to Flare 2, and isolating EG (Dehy 1, and 2) reboiler emissions to Flare 3. Additionally, both flares are each equipped with car seal opened (CSO) three-inch ball valves (FL-8510 isolation valve (624001) and FL-9910 isolation valve (620200) to allow unrestricted flow from their respective dehydration units when flares are operating per CPMS requirements (see Figure 1).

The Bypass valve may be manually opened simultaneously with the manual closure of either the FL-8510 (624001) or the FL-9910 (620200) to allow flow to be diverted to a single, properly operating flare (Flare 2 or Flare 3) under the following operating conditions:

1) Flare maintenance activities,
2) Either flare, but not both concurrently, fails to maintain a thermocouple temperature of 300 F or more after automatic shutdown, or
3) Either flare, but not both concurrently, fails to maintain a pilot light as determined upon the CPMS required, daily operational flare check.

The Bypass valve, 624001, and 620200 will be monitored monthly to ensure that each valve is in its required position to maintain VOC destruction efficiency per MACT HH. The facility will conduct monitoring per 63.771(c)(3)(i)(B) and will keep records of the monthly inspections in accordance with 63.774(b)(4)(iv)

Figure 1 Flow Diagram

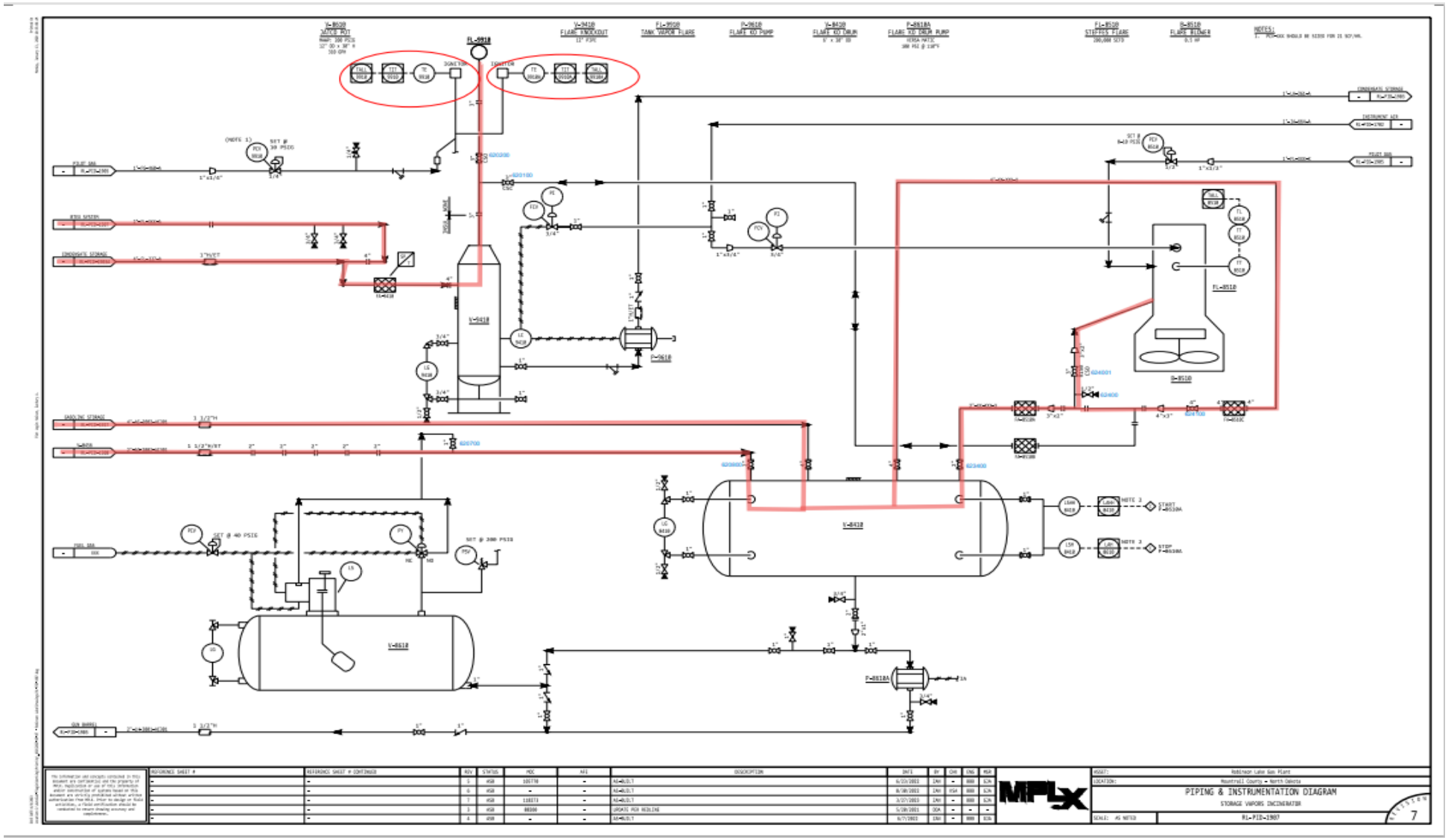


Table 1a. CPMS System Components

CPMS:	Flare-2 (FL-9910)	Flare-3 (FL-8510)	BYPASS-1
Equipment Monitored	Steffes ModelSVG-3B4 Installed 2015 Operating capacity: 180 Mscf/day Back-Up Flare to Flare 3	Steffes Air Assist Flare, Model: SAA-2; Installed ~2013. Operating Capacity: 200 Mscf/d Back-Up Flare to Flare 2	3" class 150 # Ball valve Manually operated CVI Calvary Valve Installed: 2023
Parameter(s) Monitored	1) Continuous Flare Pilot Indications 2) Pilot presence (status, temp >300°) 3) Daily Pilot Check 4) Monthly Data review 5) Quarterly Equipment Performance checks 6) Confirm 620200 Status 7) Confirm 620100 Status	1) Continuous Flare Pilot Indications a. Pilot presence (status, temp >300°) 2) Daily Pilot Check 3) Monthly Data review 4) Quarterly Equipment Performance checks 5) Confirm 624001 Status	1) Confirm status 2) Monthly Carseal Check
CPMS Equipment Description	• Thermocouple: Steffes, Type K 100' • Data Acquisition System: • PI System[1] • Wonderware • Programmable Logic Controller (PLC)	• Thermocouple: Steffes, Type K 100' • Data Acquisition System: • PI System[1] • Wonderware • Programmable Logic Controller (PLC)	• Manual monitoring
Performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer and data acquisition and calculations	Thermocouple tolerance of ±3% over the range -40 to 2600°F. If the tolerance is outside this range, the performance evaluation fails, and corrective action is taken.	Thermocouple tolerance of ±3% over the range -40 to 2600°F. If the tolerance is outside this range, the performance evaluation fails, and corrective action is taken.	In the event that the Bypass-1 car seal valve is opened due to a flare pilot failure accompanied by XV or EG pump actuation failure, corrective action and a root cause analysis will be conducted.
Placement of the CPMS readout or visual display	The status of the pilot is displayed in the control room on the human-machine interface (HMI).	The status of the pilot is displayed in the control room on the human-machine interface (HMI).	N/A
Description of the sampling interface location such that the monitoring system will provide representative measurements	The thermocouples are located within proximity to the pilot flame. Placement of the thermocouples are fixed and set by the manufacturer.	The thermocouple is located within proximity to the pilot flame. Placement of the thermocouple is fixed and set by the manufacturer.	N/A

[1] AVEVA™ software

Table 1b. CPMS System Components

CPMS:	Dehydrator-1 (H-3810) Continuous Dehy Pressure	Dehydrator-2 (H7470) Continuous Dehy Pressure	Dehydrator-3 (H-8100) Continuous Dehy Pressure
Equipment Monitored	Alco 87.5 MMscf/day; Installed 2010 H-3810	Alco 87.5 MMscf/day; Installed 2010 H-7470	Exterran 60 MMscf/day Installed 2011 H-8100
Parameter(s) Monitored	1) Continuous Dehy pressure a) PIT-3810 2) Daily Check 3) Monthly Data review	1. Continuous Dehy pressure a) PIT-7470 2) Daily Check 3) Monthly Data review	1) Continuous Dehy pressure a) PIT-8100 2) Daily Check 3) Monthly Data review
CPMS Equipment Description	• Rosemont Pressure transmitters (Model-3051TG1A2B21AS5E5M4) • Data Acquisition System: o Pi System	• Rosemont Pressure transmitter (Model-3051TG1A2B21AS5E5M4) • Data Acquisition System: o Pi System	• Rosemont Pressure transmitter (Model-3051TG1A2B21AS5E5M4) • Data Acquisition System: o Pi System
Performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer and data acquisition and calculations	Pressure Transmitter tolerance of ±3% over the range 0 to 10 psi. If the tolerance is outside this range, the performance evaluation fails, and corrective action is taken	Pressure Transmitter tolerance of ±3% over the range 0 to 10 psi. If the tolerance is outside this range, the performance evaluation fails, and corrective action is taken	Pressure Transmitter tolerance of ±3% over the range 0 to 10 psi. If the tolerance is outside this range, the performance evaluation fails, and corrective action is taken
Placement of the CPMS readout or visual display	The status of the valve and pressure are displayed in the control room on the HMI.	The status of the valve and pressure are displayed in the control room on the HMI.	The status of the flow and pressure are displayed in the control room on the HMI.
Description of the sampling interface location such that the monitoring system will provide representative measurements	The signal indicating the valve status and pressure is integral to the operation of the dehy.	The signal indicating the valve status and pressure is integral to the operation of the dehy.	The signal indicating the flow rate and pressure is integral to the operation of the dehy.

Table 1c. CPMS System Components

CPMS:	Dehydrator-1 (H-3810) Continuous Dehy Status	Dehydrator-2 (H-7470) Continuous Dehy Status	Dehydrator-3 (H-8100) Continuous Dehy Status
Equipment Monitored	Alco 87.5 MMscf/day; Installed 2010 H-3810	Alco 87.5 MMscf/day; Installed 2010 H-7470	Exterran 60 MMscf/day Installed 2011 H-8100
Parameter(s) Monitored	1) Continuous Dehy status a) XV-3810 (open/close status) 2) Daily Check a) Daily Operations Status Check 3) Monthly Data review	1) Continuous Dehy status a) XV-7470 (open/close status) 2) Daily Check a) Daily Operations Status Check 3) Monthly Data review	1) Continuous Dehy Status a) FIT-8130 (volume flow signal) 2) Daily Check a) Glycol recirculation rate 3)Monthly Data review
CPMS Equipment Description	• Automations Technologies Actuator Model-HDL122.5SRE80 • Orbit Valve-Model 3"150# (XV-3810)	• Automations Technologies Actuator Model-HDL122.5SRE80 • Orbit Valve-Model 3" 150# (XV-7470)	• Blancett-Flow Transmitter-Model B28SBX
Performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer and data acquisition and calculations	Verify electronic signal (open/closed) matches visual inspection of valve status. If the signal does not match the status, the performance evaluation fails, and corrective action is taken.	Verify electronic signal (open/closed) matches visual inspection of valve status. If the signal does not match the status, the performance evaluation fails, and corrective action is taken	Verify TEG flow rate. If the signal does not match the status, the performance evaluation fails, and corrective action is taken.
Placement of the CPMS readout or visual display	The status of the valve and pressure is displayed in the control room on the HMI.	The status of the valve and pressure is displayed in the control room on the HMI.	The status of the flow and pressure is displayed in the control room on the HMI.
Description of the sampling interface location such that the monitoring system will provide representative measurements	The signal indicating the valve status and pressure is integral to the operation of the Dehy.	The signal indicating the valve status and pressure is integral to the operation of the Dehy.	The signal indicating the flow rate and pressure is integral to the operation of the Dehy.

Data Collection (PI Data)

CPMS data are collected in the PI database system and information is retrieved using PI Datalink, a Microsoft Excel spreadsheet add-in. Within the PI database system, information is logged every five minutes. If there is an outage of the system, the cause of the outage (if known) is logged.

The following parameters are tracked with the PI database system:

Table 2. Parameters Tracked in PI Database System

	Parameter	Description	PI Tag
1	Continuous Flare Pilot indication FL-9910 (flare 2)	Thermocouple temperature compared to lost pilot set temperature	TIT_9910.PV
2	Continuous Flare Pilot Indication FL-9910A (Flare 2)	Thermocouple temperature compared to lost pilot set temperature	TIT_9910A.PV
3	Continuous Flare Pilot indication FL-8510 (Flare 3)	Thermocouple temperature compared to lost pilot set temperature	TT_8510.PV
3A	Continuous Flare Pilot indication FL-8510A	Thermocouple temperature compared to lost pilot set temperature	TT_8510A.PV
4	Continuous Dehy pressure H-3810	Dehy reboiler pressure as indicated by Pressure Indicator PIT-3810	PIT_3810.PV
5	Continuous Dehy pressure H-7470	Dehy Reboiler pressure as indicated by PIT-7470	PIT_7470.PV
6	Continuous Dehy pressure H-8100	Dehy reboiler pressure as indicated by PIT-8100	PIT_8100.PV
7	Continuous Dehy Status H-3810	Valve status indication for hot oil on Dehy-1	XV_3810.zsc
8	Continuous Dehy Status H-7470	Valve status indication for hot oil on Dehy-2	XV_7470.zsc
9	Continuous Dehy Status H-8100	Flow transmitter indication flow rate for Dehy-3	FIT_8130.PV
10	Monthly Data Review	Pull PI data and review data from XV_3810 valve position on H-3810	XV_3810.zsc
11	Monthly Data Review	Pull PI data and review data from XV_7470 valve position on H-7470	XV_7470.zsc

12	Monthly Data Review	Pull PI data and review data from glycol flow transmitter on H-8100	FIT_8130.PV

Quality Assurance and Quality Control Procedures

See Appendix H for documentation of calibration records. The process for subsequent calibrations is described in this section. On a routine basis, MPLX conducts equipment performance checks, system accuracy audits, and other audit procedures. As described in the following subsections, these include:

- 4.1 Equipment Performance Checks (Performance Evaluations)
- 4.2 Audit of Flares, Pumps, and/or Flow Indicators CPMS Data and Alarm Log
- 4.3 Visual Evaluations

Equipment Performance Checks

Periodic performance evaluations and accuracy checks are performed on the temperature monitoring devices. These checks and evaluations are performed to detect potential CPMS malfunction or failure. To ensure the CPMS is continually operating, the system is programmed to send notification to field personnel if there is a malfunction or failure of the thermocouple/transmitter, pressure transmitter, flow transmitter or block valve. These activities comprise the Quality Assurance/Quality Control (QA/QC) efforts on the CPMS. Any observance of CPMS malfunction or failure is recorded and then followed by corrective action to regain proper operation of equipment as soon as practicable.

The CPMS Performance Evaluation includes an equipment performance test which is performed on the monitoring equipment for temperature, pressure, flow, and valve status. The thermocouples and transmitters are inspected following company Standard Operating Procedures (SOP) for those devices (see Appendices B and D), according to the schedules specified in Section 4.1.2. Per the SOP, any required calibrations of the temperature monitoring system are performed during the test. If the unit of measurement drifts ±3% of span, then appropriate calibrations are made to the equipment to remedy the drift. If the thermocouples were to fail, the circuit fails such that the signal sent to the PLC indicates the flare pilot is off (low temperature); therefore, the EG Hot Oil XV's would close or the TEG pump would shut down, respectively. If the actuator and HMI do not match, the performance evaluation fails, and corrective action is taken. Upon discovery, the issue is investigated immediately. Operations will continue monitoring operations of the flare while troubleshooting is being conducted. If issues had not been resolved, operations will transfer to alternate flare while continuing to troubleshoot specific flare.

1.1.3. Notification of Performance Evaluations

MPLX will provide at least a 60-day notification to EPA via email (r8airreportenforcement@epa.gov) of the date that the performance evaluation is scheduled to begin, as required by 40 CFR §63.8(e)(2).

1.1.4. Performance Evaluation Schedule

MPLX will conduct the first Performance Evaluation according to this Monitoring Plan within 75 days after EPA approval of the Monitoring Plan. Thereafter, MPLX will conduct calendar quarter Performance Evaluations at least once every 75 days but no greater than 110 days apart. The frequency can be reduced to annual after four consecutive successful calendar quarters. In the future, if any Performance Evaluation is unsuccessful, the frequency will return to quarterly and again four consecutive successful calendar

quarters are required to reduce the frequency to annual. Any change in evaluation frequency shall be reported in the next Semi-Annual Report, including the date that the revised evaluation frequency was implemented.

1.1.5. Data Quality Objectives

Data quality objectives are typically stated in terms of data completeness, accuracy, and precision. Completeness is a measure of the percentage of valid data that is collected by the system. The maximum completeness achievable is 100%. Accuracy is a measure of the error between the result of a measurement and a true known value, also referred to as a reference or standard value. Accuracy is a measure of systematic error, which can typically be removed via calibration. Precision is a measure of the remaining error which is non-repeatable and cannot be removed.

For the CPMS, the highest level of data completeness is desired, adjusted for necessary maintenance and quality assurance activities. Regardless, given the high-temperature and industrial environment in which the system operates, unexpected down time is likely to occur, and there may be periods in which absolute completeness is not possible.

1.1.6. Records for Equipment Performance Checks

CPMS Performance Evaluations are completed as noted within this Monitoring Plan. Documentation of Performance Evaluations is maintained electronically by MPLX. Records for Equipment Performance Checks conducted during the reporting period are included in the CD Semi-Annual Report (due at least 30 days after performance of the requirement).

Audit of Flares, Pumps or Flow Indicators, and Bypass CPMS Data and Alarm Log

On a calendar month basis, MPLX conducts audits of the flares, pumps, flow indicators, bypass valve and CPMS data, including review of alarms that have occurred during the previous month. These monthly audits are conducted at least 14 days apart and no greater than 45 days apart.
Each audit compiles data for the following CPMS parameters collected during the previous calendar month and reviews:

1) Flare 2 Temp
1) Flare 3 Temp
2) Dehy 1 Valve position
3) Dehy 2 Valve Position
4) Dehy 3 Flow Indication
5) Dehy Pressure status 1
6) Dehy Pressure status 2
7) Dehy Pressure status 3
8) Bypass-1 Valve status.
9) Carseal log (624001 & 620200 CSO/ 620100 CSC)

The audit evaluates the following for each flare pilot downtime event and for normal operations when the dehydration unit is running:

1) The flare offline time accurately tracked the duration of the downtime.
2) Valve status or flow indication status during the flare pilot downtime event

3) Pressure being below set pressure.

This evaluation consists of a side-by-side contemporaneous comparison of the CPMS parameters listed above.

A Root Cause Analysis (RCA) will be conducted to determine the cause(s) of:

1) the failed automatic shutdown of Dehydrators while the flare pilots was off
2) the failed automatic shutdown of Dehydrators exceeded set pressure

During the monthly data audit, MPLX shall also review Alarms generated by the CPMS and conduct an RCA to determine the cause(s) of any missing or invalid data for the Flares, Bypasses, or Dehydrators that is five minutes or greater in duration during the monthly audit period.

An example monthly audit form is provided in Appendix F. Documentation of audits conducted for this Monitoring Plan is maintained electronically by MPLX. Records for the audits conducted during the reporting period are included in the CD Semi-Annual Report (due at least 30 days after performance of the requirement).

Visual Evaluations of Flare-2 and 3 Pilots, Dehydrators-1 and 2 Hot Oil XV status, -3 Glycol Circulation Rate, and Flare 3 Bypass Valve status

1.1.7. Routine Visual Inspections

Visual evaluations of Flare-2 and Flare-3 pilot presence, Dehydrator-1, -2, and -3, are conducted each day by a trained MPLX operations representative. The visual evaluations record the following ten items:

1) Flare 2 FL-9910 Flame presence (pilot check)
2) Flare 3 FL-8510 Flame presence (pilot check)
3) Dehy 1 H-3810 pressure PIT-3810(visually check pressure readings in field)
4) Dehy 2 H-7470 pressure PIT-7470 (visually check pressure readings in field)
5) Dehy 3 H-8100 pressure PIT-8100 (visually check pressure readings in field)
6) Dehy 1 H-3810 valve status of hot oil flow valve XV-3810 (visually verify valve position)
7) Dehy 2 H-7470 valve status of hot oil flow valve XV-7470 (visually verify valve position)
8) Dehy 3 H-8100 Glycol FIT-8130 for Glycol Pumps P8130-A or P8130-B (confirm pump status)
9) Bypass Valve (bi-direction line between Flare 2&3 (CSC)
10) Flare 8510 (624001) & 9910 (620200) (CSO) unless other provision happens.

Records of visual evaluations and associated parameters for Flare-2 and Flare 3 flare presence, Dehydrators-1, 2, and 3 pump flow, shall be retained and reported as described in Section 7 of this document.

1.1.8. System Malfunction Actions

If either dehydrator, Dehy-1, Dehy-2 or 3, is running and the visual inspection indicates the pilot flame is unlit/ off and/or no alarm is currently active, MPLX personnel shall immediately shut down the pump (s) manually. To track that the pump is off after it was shut down manually, an alert is sent to the Operations supervisor and Environmental indicating that specified hot oil switches are closed and glycol pumps are off (P8130A/ P8130B). The switch (es)/pump remains off until:

1) Dehydrator-1
    a. Flare-3 pilot is on,
    b. Corrective action has been performed
2) Dehydrator-2
    a. Flare-3 pilot is on
    b. Corrective action has been performed
3) Dehydrator-3
    a. Flare-2 pilot is on
    b. Corrective action has been performed

After completion of corrective action(s), MPLX personnel conduct a follow-up olfactory, visual, auditory (OVA) inspection of Flare-2 and 3 no less than 15 minutes while Dehydrator-1, 2, and/or 3 is operating to validate a successful restart and completion of corrective actions.

RCA will be conducted to determine the root cause(s) of a failed automated shutdown (i.e., pumps, XV's, etc.).

An example forms for documenting information collected for system malfunction events is provided in Appendix F.

Documentation of visual evaluations, OVA observations, and RCAs conducted for this Monitoring Plan is maintained electronically by MPLX. Records for all visual evaluations and, if conducted during the reporting period, any OVA observation results and RCAs, are included in the CD Semi-Annual Report (due at least 30 days after performance of the requirement).

Operation and Maintenance Procedures

The Operation and Maintenance procedures were developed with reference to the manufacturers' manuals (see Appendix G). An Inspection Report Form and a System Functionality Inspection Form is performed on the CPMS components (see Appendices D and E) during each CPMS Performance Evaluation. MPLX inspects the thermocouples, the temperature controllers, the TEG pump motors, and hot oil XV's to ensure physical integrity. See Section 4.1.2 for CPMS Performance Evaluation schedules/frequencies.

At least one set of recommended spare parts for routine repairs of the CPMS will be kept available at a local field warehouse. Spare parts include:

- Flare Pilot:
    - Thermocouple K 100' from manufacturer
    - AI PLC card
    - AO PLC card
    - Temperature transmitter
    - Thermocouple to mA converter
- Pressure Transmitters
    - Rosemount Model-3051TG1A2B21AS5E5M4 (X 3)
- EG/TEG System
    - Motor Starter Parts Eaton Cutler-Hammer: C320KGT15
    - Actuators- Automations Technologies Model-HDL122.5SRE80
    - Valves-Orbit Model-3"150# Body-WCC-Trim CR13 Core Face NI

- Flow Transmitter-Blancett Model B28SBX rebuild kits
- Bypass/ Isolation Valves
    - 3” 150# (X 3)

Procedures for the Alarm

Shutdown of Dehydrator-1, 2, or 3

At all times when Dehydrator-1, -2, and -3 are operating at Robinson Lake Gas Plant, MPLX must operate Flare-3 or Flare-2, as required by 40 C.F.R. § 63.771(d)(4)(i). If Dehydrators-1, -2, or -3 over-pressurize, the CPMS must automatically Shut down the over-pressurized Dehydrators at Robinson Lake.

If either Dehydrator fails to automatically shut down when the pilot is off, MPLX conducts RCA and records the root cause(s) for the failure of the automatic shutdown.

6.2. Air Emissions Mitigation Strategy

To reduce actual air emissions due to flare malfunction, car seal valves have been installed to re-route dehydrator emissions to either Flare-2 or Flare-3 by manually diverting flow to the correctly operating flare. This action can be performed within five minutes and prevents any remaining residual dehydrator emissions from venting to the atmosphere since these emissions will be sent to air pollution control equipment. Note that the status of each car seal valve is monitored daily via inspection.

If Flare-2 and Flare-3 are non-operational, as indicated by unlit pilot flames observed during an OVA inspection, MPLX shall either:

1) Immediately manually Shutdown Dehydrators-1, -2, and -3, and initiate an Alarm, or

2 If during an OVA inspection it discovered that the Flare-2 pilot light is off, then personnel may immediately close the FL-9910 isolation valve (620200) and open the bi-directional line valve, 62100 to allow the continuation of Dehydrator-3 by redirecting emissions from Flare-2 to Flare-3. If during an OVA inspection it discovered that Flare-3 pilot light is off, then personnel may immediately close the FL-8510 isolation valve (624001) and open the bi-directional line valve, 62100 to allow the continuation of Dehydrators-1 and -2 by redirecting emission from Flare-3 to Flare-2. Additionally, an alarm will be initiated upon this observation.

If Flare-2 and Flare-3 are non-operational, as indicated by the CPMS, failure of the monitoring equipment, local control panel, or PLC, then the CPMS for Flare-2 and Flare-3 must Alarm MPLX personnel, and the CPMS automatically shut down the affected Dehydrators at Robinson Lake, as described in the Site-Specific Monitoring Plan. To prevent further emissions due to excess field flaring when dehydrators are non-operational, operations may opt to close the FL-9910 isolation valve (620200) and open the bi-directional line valve, 62100 to allow the continuation of Dehydrator-3 by redirecting emissions from Flare-2 to Flare-3. If during an OVA inspection it discovered that Flare-3 pilot light is off, then personnel may immediately close the FL-8510 isolation valve (624001) and open the bi-directional line valve, 62100 to allow the continuation of Dehydrators-1 and -2 by redirecting emission from Flare-3 to Flare-2.

If visible emissions are observed during a Method 22 test, then procedures RLGP-SOP-E011 and RLGP-SOP-EO12, will be utilized to divert flare emissions to mitigate the smoking flare.

6.3. Dehydrator Start-up

When Dehydrators-1, -2, and/or -3 must remain shut down, then MPLX must perform the following actions to restart the unit(s): (i) corrective action(s), and (ii) confirm that Flare-2 and Flare-3 are operating as required by 40 C.F.R. § 63.771(d)(4)(i).

MPLX personnel shall conduct follow-up OVA inspections of Flare-2 and Flare-3 for no less than fifteen minutes while Dehydrator-1, -2, and -3 are operating to validate a successful restart and following completion of correction action(s).

6.4. Flowchart with Contacts, Timelines for Notification and Response

Figure 2 illustrates the operational contacts and timelines for providing notifications and responses for the shutdown of Dehydrator-1, -2, or -3, whether automatically, as programmed, or manually during a routine visual inspection.

Recordkeeping and Reporting

MPLX maintains the following records as required by 40 CFR § 63.10(c), (e)(1), and (e) (2)(i) and the CD:

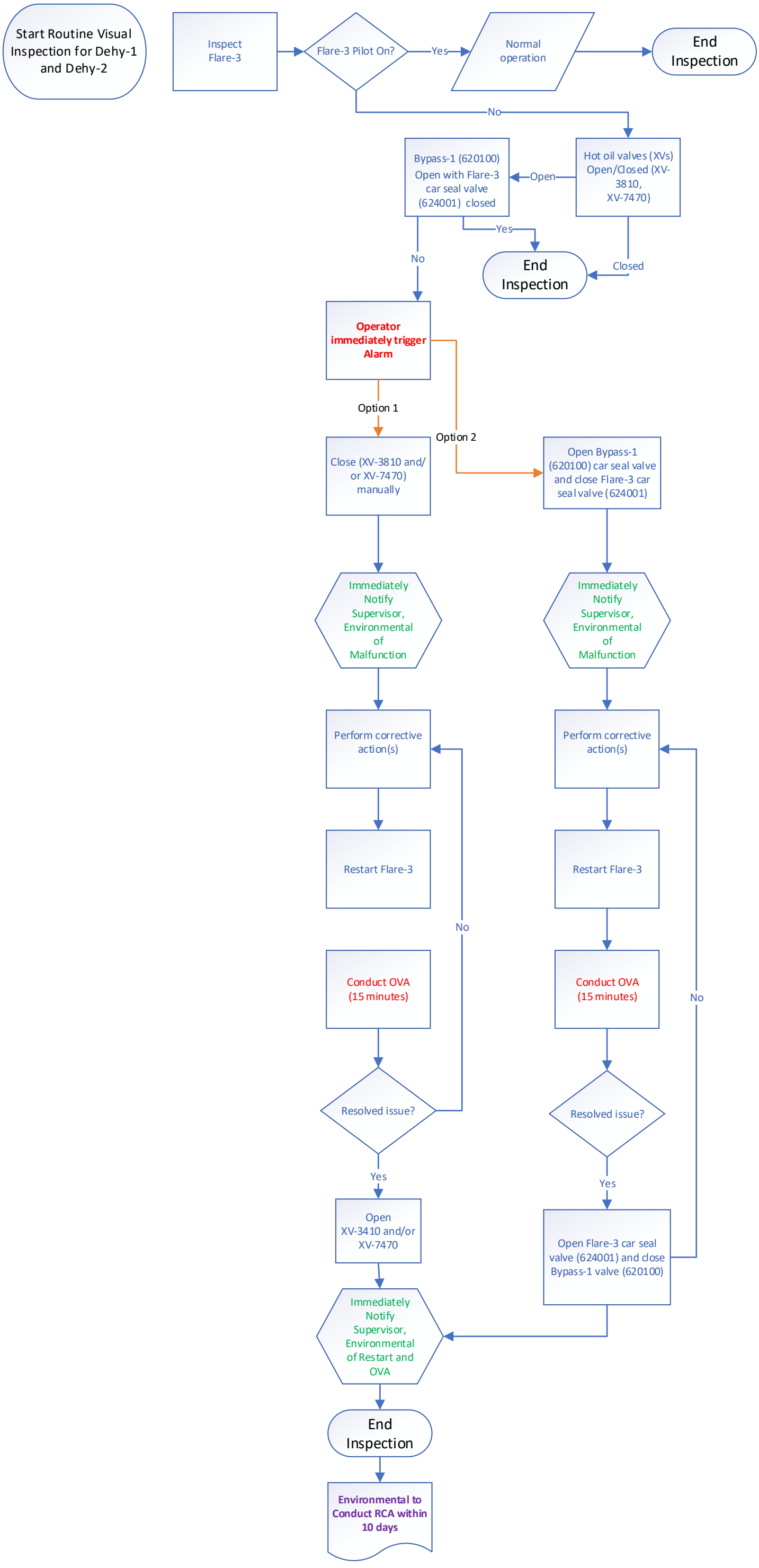
i. All required measurements including monitoring data recorded during unavoidable CPMS breakdowns;
ii. Date and time identifying each period during which the CPMS is inoperative except for zero (low level) and high-level checks;
iii. Date and time and nature of adjustments made to flare fan setting, if applicable.
iv. Specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined by the relevant standard(s), that occurs during periods other than startup, shutdowns, and malfunctions at the affected source;
v. Nature and cause of any malfunction (if known);
vi. Corrective action taken, or preventative measures adopted;
vii. Nature of the repairs or adjustments to the CPMS that was inoperative;
viii. Total process operating time during the reporting period;
ix. All procedures that are a part of a quality control program developed and implemented for CPMS under § 63.8(d); and
x. A copy of a written report of the results of the CPMS performance evaluation, as required under 40 C.F.R. § 63.8(e).

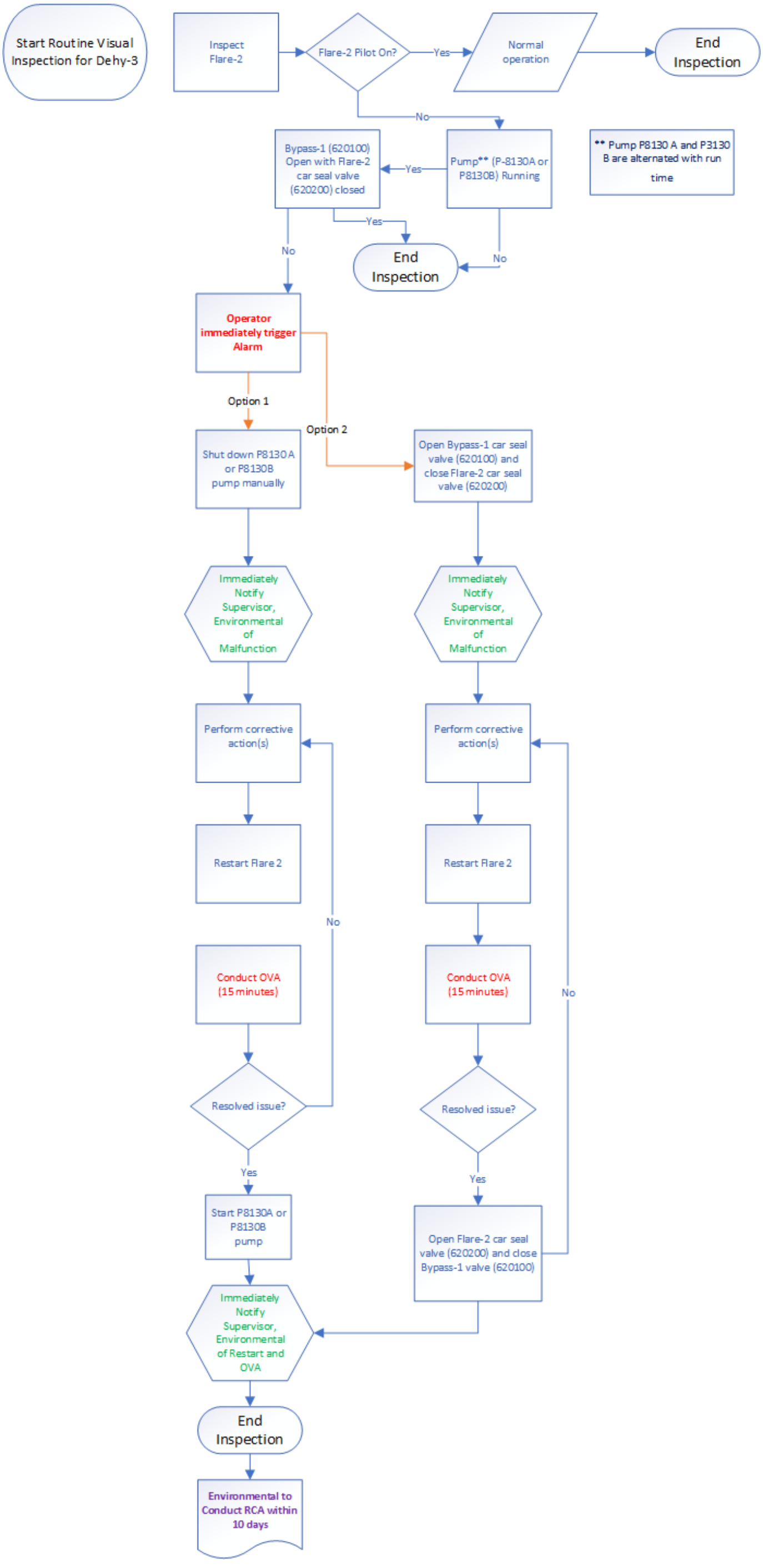
The CD Semi-Annual Report, due at least 30 days after performance of the requirement, includes the following information from this the Table 3 (CD Table 6):

Table 3: Semi-Annual Report for Compressor Station Program and Robinson Lake Gas Plant

Table 3: Semi-Annual Report for Compressor Station Program and Robinson Lake Gas Plant Injunctive Relief (CD Table 6)	
Paragraph Reference	**Requirement**
Paragraph 27. a	Revisions to Site-Specific Monitoring Plans
Paragraph 27. b	Revisions to Training Plan on Site-Specific Monitoring Plans
Paragraph 27.b(iv)	Certifications of Training on Site Specific Monitoring Plans
Paragraph 27.c	Shutdowns of the Glycol Dehydrators pursuant to scenarios described in Paragraph 27.c(i)-(ii) within the Reporting Period, including the following information: the results of the Root Cause Analysis for any Shutdown; corrective actions; confirmation of Flare operation; and confirmation of 15-minute monitoring of Flares, Bypasses, and Dehydrators through OVA inspection.
Paragraph 27.d(i)	CPMS Equipment Performance Evaluations within the Reporting Period
Paragraph 27.d.(ii)	Results of each monthly Audit of Flare, Pump or Flow Indicator CPMS Data, and Alarm Log
Paragraph 27.d(iii)	Visual Evaluations of Flare Pilot Light Flame, Bypass Valves, and Dehydrator Glycol Circulation Rate and OVA Inspection Results
N/A	A description of any non-compliance with the requirements of this Consent Decree during the reporting period and an explanation of the likely cause, remedial steps taken, or to be taken, to prevent or minimize such a violation.
N/A	A description of any non-compliance with the requirements of this Consent Decree during the reporting period and an explanation of the likely cause, remedial steps taken, or to be taken, to prevent or minimize such a violation.

Figure *2* - Flowcharts with Contacts, Timelines for Notification and Response




Start Routine Visual Inspection for Dehy-3
Inspect Flare-2
Flare-2 Pilot On?
Yes
Normal operation
End Inspection
No
Bypass-1 (620100) Open with Flare-2 car seal valve (620200) closed
Yes
Pump** (P-8130A or P8130B) Running
** Pump P8130 A and P3130 B are alternated with run time
Yes
No
End Inspection
No
Operator immediately trigger Alarm
Option 1
Option 2
Shut down P8130A or P8130B pump manually
Open Bypass-1 car seal valve (620100) and close Flare-2 car seal valve (620200)
Immediately Notify Supervisor, Environmental of Malfunction
Immediately Notify Supervisor, Environmental of Malfunction
Perform corrective action(s)
Perform corrective action(s)
Restart Flare 2
Restart Flare 2
Conduct OVA (15 minutes)
Conduct OVA (15 minutes)
No
No
Resolved issue?
Resolved issue?
Yes
Yes
Start P8130A or P8130B pump
Open Flare-2 car seal valve (620200) and close Bypass-1 valve (620100)
Immediately Notify Supervisor, Environmental of Restart and OVA
End Inspection
Environmental to Conduct RCA within 10 days

APPENDICES

- Appendix A – Site Specific Performance Evaluation Test Plan
- Appendix B – Temperature Controller (TC) Testing Procedures
- Appendix C – Temperature Transmitter (TT)/ Pressure Transmitter (PT) Calibration and Commissioning Form
- Appendix D – Field (Visual) Inspection Form Electrical and Instrumentation
- Appendix E – Pump and Bypass Field Inspection Form
- Appendix F – Example Forms
- Appendix G - Installation and Calibration Documentation
- Appendix H - Initial Calibration Documentation

Appendix A – Site-Specific Performance Evaluation Test Plan

Performance Evaluation Program Objectives

As required by 40 CFR § 63.8(e), MPLX conducts Performance Evaluations on the required CPMS located at the facility. Details of the CPMS are listed in this Site-Specific Monitoring Plan. Each Performance Evaluation is conducted to verify the accuracy of the temperature monitoring devices. This Site-Specific Monitoring Plan specifies the minimum tolerance of the CPMS, and each evaluation verifies the CPMS is operating properly and within the requirements of the rule.

Performance Evaluation Program Summary

As described in the Monitoring Plan, MPLX follows company-designed SOPs for the Performance Evaluation of the CPMS. Refer to Appendix B for these procedures. Results of the evaluation are logged in an internal Field Calibration Report Form; refer to Appendix C for this calibration form. A visual inspection of electrical equipment and instrumentation is also performed. See Appendices D and E for the Field Inspection Forms.

Performance Evaluation Schedule

CPMS performance evaluations are completed according to the schedule described in the Monitoring Plan, Section 4.1.2, Performance Evaluation Schedule (either quarterly or annually).

Data Quality Objectives

Transmitter temperatures are expected to be within 3% accuracy of tested temperatures simulated by temperature simulator. This accuracy is expected to be maintained over several temperature increments. See Appendix B for details of the testing procedure.

The pumps are also evaluated to ensure proper functioning in their binary modes of operation (signals for pump motors on or off, open or closed).

Internal and External Quality Assurance Program

Internal and external quality assurance of the CPMS is conducted throughout the year. See the Monitoring Plan, Section 4, Quality Assurance and Control, to review these practices. The Performance Evaluation is a process of external quality assurance in and of itself. It is a system audit performed internally which is available to be evaluated at the Administrator's discretion. The Performance Evaluation is a process of data validation, sample logging, and instrument calibration, as necessary.

For the CPMS, the highest level of data completeness is targeted. However, given the environment and high temperatures in which the system operates, unexpected downtime is unavoidable. It is MPLX's goal to minimize the CPMS downtime as best as possible and maintain a high level of data quality.

Appendix B – Temperature Controller (TC) Testing Procedures

Temperature Controller

		Notify and receive approval from the Control Operator prior to commencing work. ISOLATE and DRAIN Instruments with extreme care.
Step	**Task**	**Comment / Standards**
	Preliminary Isolation	**USE SIGNAL ISOLATION PROCEDURE CONTAINED IN THIS PACKET TO DETERMINE WHETHER INHIBIT SCREEN OR OTHER METHOD SHOULD BE UTILIZED TO ACHIEVE DESIRED ISOLATION BEFORE BEGINNING PROCEDURE.**
1	Prestart Checks	**ENSURE SAFE WORK AREA.** Obtain any necessary permits.
2	Identify Controller	Compare instrument nameplate details to datasheet. Obtain transmitter range from datasheet.
3	Remove Controller from Service	Remove RTD/TC wires from controller. **NOTE: USE APPROPRIATE SAFETY EQUIPMENT.**
4	Inspect Controller Condition	Check all conduit and process connections, and examine equipment for damage and overall cleanliness. Correct any problems found during inspection. **Record condition on the Field Inspection Report (FIR).**
5	Connect Calibration Equipment	Connect temperature simulator to the transmitter. (RTD / TC) Connect multi-meter to output signal (0 to 20 mA), (1-5 vdc if low power) or (digital output).
6	Check/Record Controller Data	Check recorded data against data sheet for accuracy. **NOTE: Record all data on Field Calibration Report.**
7	Instrument Calibration	Apply variable actuating temperature in increments ranging from 0% to 100% to 50%, recording "as found" readings on the Field Calibration Report. With the applied field temperature at 50%, compare the applied field value to the reading on the HMI for accuracy. If HMI reading is within 3% accuracy of applied field value, consider no field adjustment necessary. Compare the newly acquired "as found" readings to the manufacturer's specifications. If the deviation is within tolerance, consider further calibration of the instrument unnecessary and record your readings in the "as left" column. If the deviation exceeds tolerance, proceed with a full five-point calibration using manufacturers specifications in product reference manual. **Confirmation that associated instrument full loop functions are correctly executed by simulating operation of the transmitter need only be done on a new installation or replacement of an existing instrument. If a full loop test is called for, check with control room for correct signals at HMI.** When calibration is complete, record your results in the "as left" section of the Field Calibration Report.
8	Final Inspection & Tests	Verify instrument wiring and cable connections. Record any alarm and trip points on the Field Calibration Report. **Contact the control room operator and inform him when task is complete.** **Activate associated tag number by reversing initial isolation method and returning instrument to process control.** **Verify stable operation of the instrument before leaving the area.**
9	Final Records	Calculate the % error and record this on the Field Calibration Report.
10	Faulty Transmitters	If the instrument will not calibrate, obtain a replacement through your supervisor. Calibrate and perform full loop test as required.

Appendix C – Temperature Transmitter (TT)/ Pressure Transmitter (PT) Calibration Forms

MPLX	CALIBRATION AND COMMISSIONING FORM	Form	
		Revision	
	TEMPERATURE TRANSMITTER	Project:	

INST TAG:						HMI TAG					
PLC NAME			ADDRESS			RACK		SLOT		CHNL	
SIGNAL MIN VALUE		ENG UNIT MIN VALUE		SIGNAL MAX VALUE			ENG UNIT MAX VALUE				
TEST TYPE	SCHEDULED		REPAIR OR REPLACEMENT			INITIAL INSTALL					
MANUFACTURER						SERIAL NUMBER					
MODEL						RANGE			UNITS		
TEMP ELEM TYPE						ELEM RANGE					

Test Equipment

Calibration Equipment _____

Certification Date _____ SN _____

Calibration Equipment _____

Certification Date _____ SN

Preparation

Has Operations been notified and given permission to proceed with calibration?	YES	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	YES	NO	N/A
Is the instrument powered?	YES	NO	N/A
Is instrument valve isolation complete?	YES	NO	N/A

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner						
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	High	Low	Last			

TRANSMITTER/HMI DATA

% of Signal Range	Numerical Value	As Found	As Left	HMI
0%				
25%				
50%				
75%				
100%				

Are all process connections in position to perform their normal function?	YES	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	YES	NO	N/A
Is the unit in service and ready for operation?	YES	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	YES	NO	N/A

REMARKS:

SECONDARY PROTECTION:

DESCRIPTION:

VERIFICATION BY:	NAME	SIGNATURE	DATE
CONTRACTOR REPRESENTATIVE			
FIELD REPRESENTATIVE			
HMI REPRESENTATIVE			

MPLX	CALIBRATION AND COMMISSIONING FORM	Form	
		Revision	
	PRESSURE TRANSMITTER	Project:	

INST TAG:		HMI TAG		P&ID #							
PLC NAME		ADDRESS		RACK		SLOT		CHNL			
SIGNAL MIN. VALUE		ENG UNIT MIN VALUE		SIGNAL MAX VALUE		ENG UNIT MAX VALUE					
TEST TYPE	SCHEDULED		REPAIR OR REPLACEMENT		INITIAL INSTALL						
MANUFACTURER		SERIAL NUMBER									
MODEL		RANGE		UNITS							

Test Equipment

Calibration Equipment _____

Certification Date _____ SN _____

Calibration Equipment _____

Certification Date _____ SN _____

Preparation

Has Operations been notified and given permission to proceed with calibration?	YES	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	YES	NO	N/A
Is the instrument powered?	YES	NO	N/A
Is instrument valve isolation complete?	YES	NO	N/A

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner						
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	High	Low	Last			

TRANSMITTER/HMI DATA

% of Signal Range	3% Error Tolerance	Numerical Value	Crystal Value	HMI Value	As Found	As Left
0%		0				
25%						
50%		45				
75%						
100%		500				

Are all process connections in position to perform their normal function?	YES	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	YES	NO	N/A
Is the unit in service and ready for operation?	YES	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	YES	NO	N/A

REMARKS:

Secondary Protection:

Description:

VERIFICATION BY:	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1			
FIELD REPRESENTATIVE 2			
HMI REPRESENTATIVE			

Appendix D – CPMS System Functionality Inspection Forms

MPLX	**CPMS System Functionality Inspection Form - Robinson Lake FL-8510**
	PERFORMANCE EVALUATION
	Complete by shutting down flare, monitor components for correct operations. Restart flare, monitor components for correct operations

Facility: Robinson Lake

Person performing functionality inspection:	**Date of Inspection:**	**Time of Inspection:**

Did the technician force a signal less than 300°F?	**Yes** ☐ **No** ☐
Verify XV-7470 and XV-3810 Closed?	**Yes** ☐ **No** ☐
Ignitor operating correctly?	**Yes** ☐ **No** ☐
Thermocouple operating correctly?	**Yes** ☐ **No** ☐
Ignition rod operating correctly?	**Yes** ☐ **No** ☐
Temperature controller operating correctly?	**Yes** ☐ **No** ☐
Start/stop sequence operating correctly?	**Yes** ☐ **No** ☐

Description of Corrective Action(s):

Is Functionality Inspection check completed?	**Yes** ☐ **No** ☐
Did flare bypass valve operate correctly, Open and Close as appropriate?	**Yes** ☐ **No** ☐

Note: Flare inspection / check is a visual and functionality test. No disassembly required.

Notes:

MPLX	**CPMS System Functionality Inspection Form - Robinson Lake FL-9910**	
	PERFORMANCE EVALUATION	
	Complete by shutting down flare, monitor components for correct operations. Restart flare, monitor components for correct operations	
Facility: Robinson Lake		
Person performing functionality inspection:	**Date of Inspection:**	**Time of Inspection:**
Did the technician force a signal less than 300°F?		**Yes** ☐ **No** ☐
Verify Pump 8130 A/B shut-off?		**Yes** ☐ **No** ☐
Ignitor operating correctly?		**Yes** ☐ **No** ☐
Thermocouple operating correctly?		**Yes** ☐ **No** ☐
Ignition rod operating correctly?		**Yes** ☐ **No** ☐
Temperature controller operating correctly?		**Yes** ☐ **No** ☐
Start/stop sequence operating correctly?		**Yes** ☐ **No** ☐
Description of Corrective Action(s):		
Is Functionality Inspection check completed?		**Yes** ☐ **No** ☐
Did flare bypass valve operate correctly, Open and Close as appropriate?		**Yes** ☐ **No** ☐
Note: Flare inspection / check is a visual and functionality test. No disassembly required.		
Notes:		

Appendix E – Pump and Bypass Field Inspection Form

MPLX	**INSPECTION REPORT FORM** TEG PUMP Dehy-3 & XV's (Dehy-1,-2)	Form	PBFIRF
		Revision	2
	ELECTRICAL AND INSTRUMENTATION	Project:	Robinson Lake

INST TAG:	P-8130A/B XV-7470 XV-3810	**SYSTEM**	TEG NGL-1 NGL-2
AREA CLASSIFICATION	CLASS 1 DIVISION 2 HAZARDOUS AREA	**AREA CLASS DWG.**	
ARE REPAIRS REQUIRED?	YES / NO	**PID DWG. NO.**	RL-PID-1501, RL PID-1505, RL-PID-1313

CIRCLE THE APPROPRIATE SELECTION

1	When pump P-8130A (Flare 3) is not running, is the running status OFF?	YES	NO	N/A
2	When pump P-8130A (Flare 3) is running, is the running status ON?	YES	NO	N/A
3	When pump P-8130B (Flare 3) is not running, is the running status OFF?	YES	NO	N/A
4	When pump P-8130B (Flare 3) is running, is the running status ON?	YES	NO	N/A
3	When XV-7470 (Flare 2) is CLOSED, does the actuator signal = 0? (CLOSED)	YES	NO	N/A
4	When XV-7470 (Flare 2) is OPEN, does the actuator signal = 1? (OPEN)	YES	NO	N/A
3	When XV- 3810 (Flare 2) is CLOSED, does the actuator signal = 0? (CLOSED)	YES	NO	N/A
4	When XV-3810 (Flare 2) is OPEN, does the actuator signal = 1? (OPEN)	YES	NO	N/A
7	Are all components free of visible damage?	YES	NO	N/A
8	Ensure location and proper equipment - Does the sensing point match P&ID's	YES	NO	N/A

ANY QUESTION THAT IS ANSEWRED "NO" MUST INCLUDE AN EXPLANATION IN THE REMARKS SECTION PREFACED BY THE APPLICABLE QUESTION NUMBER.

REMARKS:

INSPECTION SIGN-OFF	NAME	SIGNATURE	DATE
MPLX FIELD REPRESENTATIVE			

Appendix F – Example Forms

- Example System Malfunction Event Form
- Example Monthly Audit Form for Flare, Pump, and Bypass CPMS Data

System Malfunction Event Form – *Flare/Pump/Bypass*

*(Complete if there is a malfunction of flare pilot, TEG pump, or bypass valve **while the pump was running**)*

Facility: Robinson Lake Gas Plant

Person who Discovered Malfunction:	**Date Discovered:**	**Time Discovered:**

Description of Malfunction:

Flare Pilot Present? Yes ☐ No ☐

Bypass Valve Open? Yes ☐ No ☐

Was Corrective Action Successful? Yes ☐ No ☐

Description of Corrective Action(s):

15-minute OVA: **Start Time:** **OVA End Time:**

Notes:

Monthly CPMS Audit Form

Flare/Pump/Bypass/XV's

(To be included with CD Semi-Annual Report)

Facility: Robinson Lake Gas Plant

Person Conducting Audit:

Date:

Parameter:	Data Complete?	Describe missing or invalid data gaps (≥ 5 minutes):
1) Flare 2 FL-9910 Flame presence (pilot check)	Yes ☐ No ☐	
2) Flare 3 FL-8510 Flame presence (pilot check)	Yes ☐ No ☐	
3) Dehy 1 H-3810 pressure PIT-3810(visually check pressure readings in field)	Yes ☐ No ☐	
4) Dehy 2 H-7470 pressure PIT-7470 (visually check pressure readings in field)	Yes ☐ No ☐	
5) Dehy 3 H-8100 pressure PIT-8100 (visually check pressure readings in field)	Yes ☐ No ☐	
6) Dehy 1 H-3810 valve status of hot oil flow valve XV-3810 (visually verify valve position)	Yes ☐ No ☐	
7) Dehy 2 H-7470 valve status of hot oil flow valve XV-7470 (visually verify valve position)	Yes ☐ No ☐	
8) Dehy 3 H-8100 Glycol FIT-8130 for Glycol Pumps P8130-A or P3180-B (confirm pump status)	Yes ☐ No ☐	
9) Bypass Valve (bi-direction line between Flare 2&3 (CSC)	Yes ☐ No ☐	
10) Flare 8510 (624001) & 9910 (620200) (CSO) unless other provision happens.	Yes ☐ No ☐	

Data Review:

1) Were there data accuracy issues for the flare pilot offline timer tracking during any flare pilot downtime events? If so, describe in detail.

2) Were there any issues with the pump status during the flare pilot downtime events? If so, describe in detail.

3) Were there data accuracy issues for the flare bypass timer tracking during normal operations when the pump was running? If so, describe in detail.

Root Cause Analysis (RCA):

Was an RCA conducted during the period for any of the following?

1) Missing or invalid data (periods ≥ 5 minutes) Yes ☐ No ☐
2) Failed automatic shutdown of Dehydrator-1 while the flare pilot was off Yes ☐ No ☐
3) Bypass valve sending gas to atmosphere while the pump is on Yes ☐ No ☐

If so, attach the RCA report.

Alarm Log Review:

Were there any alarm log issues? If so, describe and indicate how they were resolved.

Notes:

Appendix G – Installation and Calibration Documentation

Appendix H – Initial Calibration Documentation

MPLX

FORM #

LOCATION: Robinson Lake
P&ID: RL-PID-1907
TEST TYPE: Initial

ANALOG INPUT CALIBRATION & COMMISSIONING FORM

INSTRUMENT & PLC SPECIFICATION

INSTRUMENT TAG	TIT-9910	DESCRIPTION	TANK VAPOR FLARE FL-9910 TEMPERATURE					
HMI TAG	TIT-9910							
PLC NAME	TEG	MANUFACTURER	PYROMATION					
ELEMENT TYPE	Type K	MODEL NUMBER	Series 441 Type K					
INSTRUMENT RANGE	0-2600 DegF	SERIAL NUMBER						
CALIBRATED RANGE	0-2600 DegF							
JUNCTION BOX		PLC-1 NAME	TEG			PLC-2 NAME		
TERMINAL STRIP		RACK	SLOT	CHANNEL		RACK	SLOT	CHANNEL
TERMINALS		0	4	0				

TEST PREPARATION

HAS OPERATIONS BEEN NOTIFIED AND GIVEN PERMISSION TO PROCEED WITH CALIBRATION?	(YES)	NO	N/A
ARE INHIBITS IN PLACE TO PREVENT AN INADVERTENT SHUTDOWN?	YES	NO	(N/A)
IS THE INSTRUMENT VALVE ISOLATION COMPLETE?	YES	NO	(N/A)

CALIBRATION EQUIPMENT	CAL DATE	SERIAL NUMBER
—		

ALARM DATA

ALARM	UNDER/OVER RANGE	LL	L	H	HH	VERIFIER INITIALS
SETPOINT	UNDER	150	200	1950	-	JLA
BUBBLE/ INDICATION	✓	✓	✓			JLA
BANNER	✓	✓	✓			JLA
HORN (PROCESS)						
STROBE (BLUE)						

TRANSMITTER & HMI DATA

% OF SIGNAL RANGE	SIGNAL VALUE	ENGINEERING VALUE (EU)	AS FOUND/AS LEFT
0%	4 mA		THERMOCOUPLE TESTING:
25%	8 mA		a) AT AMBIENT
50%	12 mA		b) INSTALLED & IN SERVICE
75%	16 mA		c) DE-POWERED
100%	20 mA		

ORANGE TAG COMPLETION

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			

HMI TEST COMPLETION

HAVE ALL PLC/HMI INHIBITS, TEMPORY LOGIC, AND FORCES BEEN REMOVED?	(YES)	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
HMI REPRESENTATIVE	Jimmy Acy	Jimmy Acy	3/29/2023

FIELD TEST COMPLETION

IS THE UNIT IN SERVICE AND READY FOR OPERATION WITH ALL PROCESS CONNECTIONS IN POSITION TO PERFORM PROPERLY?	YES	NO	N/A
IF THE 'AS FOUND' DATA EXCEEDED 3% ERROR, DID YOU DECREASE THE CALIBRATION TIME PERIOD BY 50% AS REQUIRED?	YES	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	Kent Weishaar	Kent Weishaar	3/29/2023
FIELD REPRESENTATIVE 2			

REMARKS

OFFICE USE ONLY

FORM ENGINEERED BY	PROGRAMMING FORM APPROVAL BY	SCADA FORM APPROVAL BY	DATE APPROVED

MPLX

PLANT Robinson Lake Gas Processing
P&ID RL-PID-1907

FIELD INSPECTION FORM

INSTRUMENT SPECIFICATION

DESCRIPTION	TANK VAPOR FLARE FL-9910 TEMPERATURE	TAG	TIT-9910
MANUFACTURER	Pyromation	MODEL NUMBER	Series 441 Type K

FIELD INSPECTION

1	IS SUFFICIENT AND SAFE ACCESS TO THE DEVICE PROVIDED?	YES	NO	N/A
2	IS A PERMANENT TAG ATTACHED TO THE DEVICE?	YES	NO	N/A
3	IS THE IDENTIFICATION TAG ACCURATE?	YES	NO	N/A
4	IS THE INSTRUMENT INSTALLED IN THE CORRECT LOCATION; DOES ITS SENSING POINT MATCH THE P&ID'S?	YES	NO	N/A
5	DOES THE DEVICE SATISFY AREA CLASSIFICATION REQUIREMENTS?	YES	NO	N/A
6	IS THE CONDUIT SATISFACTORILY SUPPORTED?	YES	NO	N/A
7	ARE ALL CONDUIT PLUGS INSTALLED?	YES	NO	N/A
8	IS THERE A 'UNION' AT THE DEVICE TO PROVIDE CONDUIT DISCONNECT FOR REPLACEMENT?	YES	NO	N/A
9	ARE ALL CONDUIT BODIES AND THREADED CONNECTIONS MADE UP 'WRENCH-TIGHT'?	YES	NO	N/A
10	IS THE CONDUIT INSTALLED STRAIGHT, LEVEL, AND CLAMPED SUFFICIENTLY?	YES	NO	N/A
11	IF A CONDUIT SEAL IS REQUIRED, IS IT INSTALLED, POURED, AND MARKED?	YES	NO	N/A
12	ARE THE DEVICE, TUBING, CAPILLARIES, AND/OR SENSING LINES PROPERLY SUPPORTED?	YES	NO	N/A
13	ARE ALL INSTRUMENT SENSING LINES FREE OF LEAKS?	YES	NO	N/A
14	CAN THE INSTRUMENT BE PROPERLY ISOLATED FOR REPLACEMENT, MAINTENANCE, AND CALIBRATION?	YES	NO	N/A
15	IS THE TUBING INSTALLED PLUMB AND LEVEL (OR WITH THE APPROPRIATE DRAIN ANGLE)?	YES	NO	N/A
16	IS THE DEVICE GROUNDED?	YES	NO	N/A
17	IS THE SHIELD/DRAIN CORRECTLY INSULATED FROM GROUND?	YES	NO	N/A
18	ARE THE CONDUCTORS PROPERLY TERMINATED?	YES	NO	N/A
19	ARE THE CONDUCTORS MARKED AND IDENTIFIED BY PERMANENT MEANS?	YES	NO	N/A
20	ARE PIPE PLUGS INSTALLED (IF REQUIRED)?	YES	NO	N/A
21	ARE ALL COMPONENTS FREE OF VISIBLE DAMAGE?	YES	NO	N/A
22	IF A SUPPLY REGULATOR IS USED, IS IT DIRECTIONALLY CORRECT AND PROPERLY SET?	YES	NO	N/A

SUMMARY

ARE REPAIRS REQUIRED?	YES	NO

BOTH FIELD REPRESENTATIVE SIGNATURES ARE REQUIRED TO APPROVE THE ANSWERS TO THE QUESTIONS ABOVE

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			
FIELD REPRESENTATIVE	DERRICK KOELZER		3/29/23

REMARKS

INCLUDE THE APPLICABLE QUESTION NUMBER AND EXPLANATION BELOW FOR ANY QUESTIONS THAT ARE ANSWERED 'NO'

MPLX

FORM #

LOCATION: Robinson Lake
P&ID: RL-PID-1907
TEST TYPE: Initial

ANALOG INPUT CALIBRATION & COMMISSIONING FORM

INSTRUMENT & PLC SPECIFICATION

INSTRUMENT TAG	TIT-8510A	DESCRIPTION	FLARE FL-8510 TEMPERATURE					
HMI TAG	TIT-8510A							
PLC NAME	TEG	MANUFACTURER	PYROMATION					
ELEMENT TYPE	Type K	MODEL NUMBER	Series 441 Type K					
INSTRUMENT RANGE	-40-2500 DegF	SERIAL NUMBER						
CALIBRATED RANGE	-40-2500 DegF							
JUNCTION BOX	JB-1500	PLC-1 NAME	TEG			PLC-2 NAME		
TERMINAL STRIP	TB-1	RACK	SLOT	CHANNEL		RACK	SLOT	CHANNEL
TERMINALS	7,8 (9 = shield)	0	4	3				

TEST PREPARATION

HAS OPERATIONS BEEN NOTIFIED AND GIVEN PERMISSION TO PROCEED WITH CALIBRATION?	(YES)	NO	N/A
ARE INHIBITS IN PLACE TO PREVENT AN INADVERTENT SHUTDOWN?	YES	NO	(N/A)
IS THE INSTRUMENT VALVE ISOLATION COMPLETE?	YES	NO	(N/A)

CALIBRATION EQUIPMENT	CAL DATE	SERIAL NUMBER

ALARM DATA

ALARM	UNDER/OVER RANGE	LL	L	H	HH	VERIFIER INITIALS
SETPOINT	✓/	300	350	2100		JLA
BUBBLE/ INDICATION	✓/	✓	✓	✓		JLA
BANNER						
HORN (PROCESS)						
STROBE (BLUE)						

TRANSMITTER & HMI DATA

% OF SIGNAL RANGE	SIGNAL VALUE	ENGINEERING VALUE (EU)	AS FOUND/AS LEFT
0%	4 mA	-40.1	(3.99 mA)
25%	8 mA	499.7	(7.4 mA)
50%	12 mA	1246.6	(12.0 mA)
75%	16 mA	1996	(17.51 mA)
100%	20 mA	2495.5	(19.9 mA)

ORANGE TAG COMPLETION

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			

HMI TEST COMPLETION

HAVE ALL PLC/HMI INHIBITS, TEMPORY LOGIC, AND FORCES BEEN REMOVED?	(YES)	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
HMI REPRESENTATIVE	Jimmy Acy	Jimmy Acy	OCT 11, 2023

FIELD TEST COMPLETION

IS THE UNIT IN SERVICE AND READY FOR OPERATION WITH ALL PROCESS CONNECTIONS IN POSITION TO PERFORM PROPERLY?	(YES)	NO	N/A
IF THE 'AS FOUND' DATA EXCEEDED 3% ERROR, DID YOU DECREASE THE CALIBRATION TIME PERIOD BY 50% AS REQUIRED?	YES	NO	(N/A)

VERIFICATION BY	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	KENT WEISHAAR		10/11/2023
FIELD REPRESENTATIVE 2			

REMARKS

THERMOCOUPLE CALIBRATOR COULD NOT ARIVE OVER-RANGE SIGNAL.
"LIVE" VALUE OF 1232 DegF WAS WITHIN 10 degrees OF TT-8510

OFFICE USE ONLY

FORM ENGINEERED BY	PROGRAMMING FORM APPROVAL BY	SCADA FORM APPROVAL BY	DATE APPROVED

MPLX

PLANT: Robinson Lake Gas Processing
P&ID: RL-PID-1907

FIELD INSPECTION FORM

INSTRUMENT SPECIFICATION			
DESCRIPTION	FLARE 3: FL-8510A TEMPERATURE	TAG	TT-8510A
MANUFACTURER	Pyromation	MODEL NUMBER	Series 441 Type K

	FIELD INSPECTION			
1	IS SUFFICIENT AND SAFE ACCESS TO THE DEVICE PROVIDED?	(YES)	NO	N/A
2	IS A PERMANENT TAG ATTACHED TO THE DEVICE?	(YES)	NO	N/A
3	IS THE IDENTIFICATION TAG ACCURATE?	(YES)	NO	N/A
4	IS THE INSTRUMENT INSTALLED IN THE CORRECT LOCATION; DOES ITS SENSING POINT MATCH THE P&ID'S?	(YES)	NO	N/A
5	DOES THE DEVICE SATISFY AREA CLASSIFICATION REQUIREMENTS?	(YES)	NO	N/A
6	IS THE CONDUIT SATISFACTORILY SUPPORTED?	YES	NO	(N/A)
7	ARE ALL CONDUIT PLUGS INSTALLED?	YES	NO	(N/A)
8	IS THERE A 'UNION' AT THE DEVICE TO PROVIDE CONDUIT DISCONNECT FOR REPLACEMENT?	YES	NO	(N/A)
9	ARE ALL CONDUIT BODIES AND THREADED CONNECTIONS MADE UP 'WRENCH-TIGHT'?	YES	NO	(N/A)
10	IS THE CONDUIT INSTALLED STRAIGHT, LEVEL, AND CLAMPED SUFFICIENTLY?	YES	NO	(N/A)
11	IF A CONDUIT SEAL IS REQUIRED, IS IT INSTALLED, POURED, AND MARKED?	YES	NO	(N/A)
12	ARE THE DEVICE, TUBING, CAPILLARIES, AND/OR SENSING LINES PROPERLY SUPPORTED?	YES	NO	(N/A)
13	ARE ALL INSTRUMENT SENSING LINES FREE OF LEAKS?	YES	NO	(N/A)
14	CAN THE INSTRUMENT BE PROPERLY ISOLATED FOR REPLACEMENT, MAINTENANCE, AND CALIBRATION?	(YES)	NO	N/A
15	IS THE TUBING INSTALLED PLUMB AND LEVEL (OR WITH THE APPROPRIATE DRAIN ANGLE)?	YES	NO	(N/A)
16	IS THE DEVICE GROUNDED?	YES	NO	(N/A)
17	IS THE SHIELD/DRAIN CORRECTLY INSULATED FROM GROUND?	(YES)	NO	N/A
18	ARE THE CONDUCTORS PROPERLY TERMINATED?	(YES)	NO	N/A
19	ARE THE CONDUCTORS MARKED AND IDENTIFIED BY PERMANENT MEANS?	(YES)	NO	N/A
20	ARE PIPE PLUGS INSTALLED (IF REQUIRED)?	YES	NO	(N/A)
21	ARE ALL COMPONENTS FREE OF VISIBLE DAMAGE?	(YES)	NO	N/A
22	IF A SUPPLY REGULATOR IS USED, IS IT DIRECTIONALLY CORRECT AND PROPERLY SET?	YES	NO	(N/A)

SUMMARY		
ARE REPAIRS REQUIRED?	YES	NO

BOTH FIELD REPRESENTATIVE SIGNATURES ARE REQUIRED TO APPROVE THE ANSWERS TO THE QUESTIONS ABOVE

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			
FIELD REPRESENTATIVE	Kent Weishaar	Kent Weishaar	10/11/2023

REMARKS

INCLUDE THE APPLICABLE QUESTION NUMBER AND EXPLANATION BELOW FOR ANY QUESTIONS THAT ARE ANSWERED 'NO'

MPLX

FORM #

LOCATION Robinson Lake
P&ID RL-PID-1505
TEST TYPE Initial

ANALOG INPUT CALIBRATION & COMMISSIONING FORM

INSTRUMENT & PLC SPECIFICATION

INSTRUMENT TAG	PIT-8100	DESCRIPTION	GLYCOL REBOILER PRESSURE					
HMI TAG	PIT-8100							
PLC NAME	TEG	MANUFACTURER	ROSEMOUNT					
ELEMENT TYPE		MODEL NUMBER	3051TG1A2B21AKBM5					
INSTRUMENT RANGE	0-30 PSI	SERIAL NUMBER						
CALIBRATED RANGE	0-10 PSI							
JUNCTION BOX		PLC-1 NAME	TEG			PLC-2 NAME		
TERMINAL STRIP		RACK	SLOT	CHANNEL		RACK	SLOT	CHANNEL
TERMINALS		0	4	2				

TEST PREPARATION

HAS OPERATIONS BEEN NOTIFIED AND GIVEN PERMISSION TO PROCEED WITH CALIBRATION?	(YES)	NO	N/A
ARE INHIBITS IN PLACE TO PREVENT AN INADVERTENT SHUTDOWN?	YES	NO	(N/A)
IS THE INSTRUMENT VALVE ISOLATION COMPLETE?	(YES)	NO	N/A

CALIBRATION EQUIPMENT	CAL DATE	SERIAL NUMBER
Crystal XP2i	7-19-22	207516

ALARM DATA

ALARM	UNDER/OVER RANGE	LL	L	H	HH	VERIFIER INITIALS
SETPOINT	u/o	-	-	2 PSI	3 PSI	JLA
BUBBLE/ INDICATION	✓/✓			✓	✓	JLA
BANNER	✓/✓			✓	✓	JLA
HORN (PROCESS)						
STROBE (BLUE)						

TRANSMITTER & HMI DATA

% OF SIGNAL RANGE	SIGNAL VALUE	ENGINEERING VALUE (EU)	AS FOUND/AS LEFT
0%	4 mA	0.0	
25%	8 mA	2.51	
50%	12 mA	5.0	
75%	16 mA	7.5	
100%	20 mA	10.1	

ORANGE TAG COMPLETION

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			

HMI TEST COMPLETION

HAVE ALL PLC/HMI INHIBITS, TEMPORY LOGIC, AND FORCES BEEN REMOVED?	(YES)	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
HMI REPRESENTATIVE	Jimmy Acy	Jimmy Acy	3/29/23

FIELD TEST COMPLETION

IS THE UNIT IN SERVICE AND READY FOR OPERATION WITH ALL PROCESS CONNECTIONS IN POSITION TO PERFORM PROPERLY?	YES	NO	N/A
IF THE 'AS FOUND' DATA EXCEEDED 3% ERROR, DID YOU DECREASE THE CALIBRATION TIME PERIOD BY 50% AS REQUIRED?	YES	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	Kent Weishaar		3/29/2023
FIELD REPRESENTATIVE 2			

REMARKS

OFFICE USE ONLY

FORM ENGINEERED BY	PROGRAMMING FORM APPROVAL BY	SCADA FORM APPROVAL BY	DATE APPROVED

MPLX

PLANT: Robinson Lake Gas Processing
P&ID: RL-PID-1505

FIELD INSPECTION FORM

INSTRUMENT SPECIFICATION

DESCRIPTION	GLYCOL REBOILER PRESSURE	TAG	PIT-8100
MANUFACTURER	ROSEMOUNT	MODEL NUMBER	3051TG1A2B21AKBM5

FIELD INSPECTION

1	IS SUFFICIENT AND SAFE ACCESS TO THE DEVICE PROVIDED?	YES	NO	N/A
2	IS A PERMANENT TAG ATTACHED TO THE DEVICE?	YES	NO	N/A
3	IS THE IDENTIFICATION TAG ACCURATE?	YES	NO	N/A
4	IS THE INSTRUMENT INSTALLED IN THE CORRECT LOCATION; DOES ITS SENSING POINT MATCH THE P&ID'S?	YES	NO	N/A
5	DOES THE DEVICE SATISFY AREA CLASSIFICATION REQUIREMENTS?	YES	NO	N/A
6	IS THE CONDUIT SATISFACTORILY SUPPORTED?	YES	NO	N/A
7	ARE ALL CONDUIT PLUGS INSTALLED?	YES	NO	N/A
8	IS THERE A 'UNION' AT THE DEVICE TO PROVIDE CONDUIT DISCONNECT FOR REPLACEMENT?	YES	NO	N/A
9	ARE ALL CONDUIT BODIES AND THREADED CONNECTIONS MADE UP 'WRENCH-TIGHT'?	YES	NO	N/A
10	IS THE CONDUIT INSTALLED STRAIGHT, LEVEL, AND CLAMPED SUFFICIENTLY?	YES	NO	N/A
11	IF A CONDUIT SEAL IS REQUIRED, IS IT INSTALLED, POURED, AND MARKED?	YES	NO	N/A
12	ARE THE DEVICE, TUBING, CAPILLARIES, AND/OR SENSING LINES PROPERLY SUPPORTED?	YES	NO	N/A
13	ARE ALL INSTRUMENT SENSING LINES FREE OF LEAKS?	YES	NO	N/A
14	CAN THE INSTRUMENT BE PROPERLY ISOLATED FOR REPLACEMENT, MAINTENANCE, AND CALIBRATION?	YES	NO	N/A
15	IS THE TUBING INSTALLED PLUMB AND LEVEL (OR WITH THE APPROPRIATE DRAIN ANGLE)?	YES	NO	N/A
16	IS THE DEVICE GROUNDED?	YES	NO	N/A
17	IS THE SHIELD/DRAIN CORRECTLY INSULATED FROM GROUND?	YES	NO	N/A
18	ARE THE CONDUCTORS PROPERLY TERMINATED?	YES	NO	N/A
19	ARE THE CONDUCTORS MARKED AND IDENTIFIED BY PERMANENT MEANS?	YES	NO	N/A
20	ARE PIPE PLUGS INSTALLED (IF REQUIRED)?	YES	NO	N/A
21	ARE ALL COMPONENTS FREE OF VISIBLE DAMAGE?	YES	NO	N/A
22	IF A SUPPLY REGULATOR IS USED, IS IT DIRECTIONALLY CORRECT AND PROPERLY SET?	YES	NO	N/A

SUMMARY

ARE REPAIRS REQUIRED?	YES	NO

BOTH FIELD REPRESENTATIVE SIGNATURES ARE REQUIRED TO APPROVE THE ANSWERS TO THE QUESTIONS ABOVE

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			
FIELD REPRESENTATIVE	DERRICK KOELZER		3/24/23

REMARKS

INCLUDE THE APPLICABLE QUESTION NUMBER AND EXPLANATION BELOW FOR ANY QUESTIONS THAT ARE ANSWERED 'NO'

MPLX

FORM #

LOCATION: Robinson Lake
P&ID: RL-PID-1907
TEST TYPE: Initial

ANALOG INPUT CALIBRATION & COMMISSIONING FORM

INSTRUMENT & PLC SPECIFICATION

INSTRUMENT TAG	TIT-9910A	DESCRIPTION	TANK VAPOR FLARE FL-9910 TEMPERATURE					
HMI TAG	TIT-9910A							
PLC NAME	TEG	MANUFACTURER	PYROMATION					
ELEMENT TYPE	Type K	MODEL NUMBER	Series 441 Type K					
INSTRUMENT RANGE	0-2500 DegF	SERIAL NUMBER						
CALIBRATED RANGE	0-2500 DegF							
JUNCTION BOX		PLC-1 NAME	TEG			PLC-2 NAME		
TERMINAL STRIP		RACK	SLOT	CHANNEL		RACK	SLOT	CHANNEL
TERMINALS		0	4	1				

TEST PREPARATION

HAS OPERATIONS BEEN NOTIFIED AND GIVEN PERMISSION TO PROCEED WITH CALIBRATION?	(YES)	NO	N/A
ARE INHIBITS IN PLACE TO PREVENT AN INADVERTENT SHUTDOWN?	YES	NO	(N/A)
IS THE INSTRUMENT VALVE ISOLATION COMPLETE?	YES	NO	(N/A)

CALIBRATION EQUIPMENT	CAL DATE	SERIAL NUMBER
—		

ALARM DATA

ALARM	UNDER/OVER RANGE	LL	L	H	HH	VERIFIER INITIALS
SETPOINT	UNDER	150	200	1950	-	JLA
BUBBLE/ INDICATION	✓	✓	✓			JLA
BANNER	✓	✓	✓			JLA
HORN (PROCESS)						
STROBE (BLUE)						

TRANSMITTER & HMI DATA

% OF SIGNAL RANGE	SIGNAL VALUE	ENGINEERING VALUE (EU)	AS FOUND/AS LEFT
0%	4 mA		THERMOCOUPLE TESTING:
25%	8 mA		a) AT AMBIENT
50%	12 mA		b) INSTALLED & HEATED
75%	16 mA		c) DE-POWERED
100%	20 mA		

ORANGE TAG COMPLETION

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			

HMI TEST COMPLETION

HAVE ALL PLC/HMI INHIBITS, TEMPORY LOGIC, AND FORCES BEEN REMOVED?	(YES)	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
HMI REPRESENTATIVE	Jimmy Acy	Jimmy Acy	3/29/2023

FIELD TEST COMPLETION

IS THE UNIT IN SERVICE AND READY FOR OPERATION WITH ALL PROCESS CONNECTIONS IN POSITION TO PERFORM PROPERLY?	YES	NO	N/A
IF THE 'AS FOUND' DATA EXCEEDED 3% ERROR, DID YOU DECREASE THE CALIBRATION TIME PERIOD BY 50% AS REQUIRED?	YES	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	Kent Weishaar		3/29/2023
FIELD REPRESENTATIVE 2			

REMARKS

OFFICE USE ONLY

FORM ENGINEERED BY	PROGRAMMING FORM APPROVAL BY	SCADA FORM APPROVAL BY	DATE APPROVED

FORM #

LOCATION: Robinson Lake
P&ID: RL-PID-1907
TEST TYPE: Initial

ANALOG INPUT CALIBRATION & COMMISSIONING FORM

INSTRUMENT & PLC SPECIFICATION

INSTRUMENT TAG	TIT-9910A	DESCRIPTION	TANK VAPOR FLARE FL-9910 TEMPERATURE					
HMI TAG	TIT-9910A							
PLC NAME	TEG	MANUFACTURER	PYROMATION					
ELEMENT TYPE	Type K	MODEL NUMBER	Series 441 Type K					
INSTRUMENT RANGE	0-2500 DegF	SERIAL NUMBER						
CALIBRATED RANGE	0-2500 DegF							
JUNCTION BOX		PLC-1 NAME	TEG			PLC-2 NAME		
TERMINAL STRIP		RACK	SLOT	CHANNEL		RACK	SLOT	CHANNEL
TERMINALS		0	4	1				

TEST PREPARATION

HAS OPERATIONS BEEN NOTIFIED AND GIVEN PERMISSION TO PROCEED WITH CALIBRATION?	(YES)	NO	N/A
ARE INHIBITS IN PLACE TO PREVENT AN INADVERTENT SHUTDOWN?	YES	NO	(N/A)
IS THE INSTRUMENT VALVE ISOLATION COMPLETE?	YES	NO	(N/A)

CALIBRATION EQUIPMENT	CAL DATE	SERIAL NUMBER
–		

ALARM DATA

ALARM	UNDER/OVER RANGE	LL	L	H	HH	VERIFIER INITIALS
SETPOINT	UNDER	150	200	1950	-	JLA
BUBBLE/ INDICATION	✓	✓	✓			JLA
BANNER	✓	✓	✓			JLA
HORN (PROCESS)						
STROBE (BLUE)						

TRANSMITTER & HMI DATA

% OF SIGNAL RANGE	SIGNAL VALUE	ENGINEERING VALUE (EU)	AS FOUND/AS LEFT
0%	4 mA		THERMOCOUPLE TESTING:
25%	8 mA		a) AT AMBIENT
50%	12 mA		b) INSTALLED & HEATED
75%	16 mA		c) DE-POWERED
100%	20 mA		

ORANGE TAG COMPLETION

VERIFICATION BY	NAME	SIGNATURE	DATE
CONTRACTOR REP.			

HMI TEST COMPLETION

HAVE ALL PLC/HMI INHIBITS, TEMPORY LOGIC, AND FORCES BEEN REMOVED?	(YES)	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
HMI REPRESENTATIVE	Jimmy Acy	Jimmy Acy	3/29/2023

FIELD TEST COMPLETION

IS THE UNIT IN SERVICE AND READY FOR OPERATION WITH ALL PROCESS CONNECTIONS IN POSITION TO PERFORM PROPERLY?	YES	NO	N/A
IF THE 'AS FOUND' DATA EXCEEDED 3% ERROR, DID YOU DECREASE THE CALIBRATION TIME PERIOD BY 50% AS REQUIRED?	YES	NO	N/A

VERIFICATION BY	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	Kent Weishaar	[signature]	3/29/2023
FIELD REPRESENTATIVE 2			

REMARKS

OFFICE USE ONLY

FORM ENGINEERED BY	PROGRAMMING FORM APPROVAL BY	SCADA FORM APPROVAL BY	DATE APPROVED

MPLX	CALIBRATION AND COMMISSIONING FORM	Form	
	TEMPERATURE TRANSMITTER	Revision	
		Project:	

INST TAG:	TE-9910			HMI TAG	TE-9910				
PLC NAME	STATION	ADDRESS		RACK		SLOT		CHNL	
SIGNAL MIN. VALUE	-40	ENG UNIT MIN VALUE	-40	SIGNAL MAX VALUE	2500	ENG UNIT MAX VALUE	2600		
TEST TYPE	SCHEDULED	X	REPAIR OR REPLACEMENT		INITIAL INSTALL				
MANUFACTURER	PRYOMATION			SERIAL NUMBER	K4028404/E7				
MODEL	441-1KU			RANGE	-40-2500	UNITS	°F		
TEMP ELEM TYPE	K			ELEM RANGE					

Test Equipment

Calibration Equipment: FLUKE 714

Certification Date: _____ SN: _____

Calibration Equipment: _____

Certification Date: _____ SN: _____

Preparation

Has Operations been notified and given permission to proceed with calibration?	(YES)	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	(YES)	NO	N/A
Is the instrument powered?	(YES)	NO	N/A
Is instrument valve isolation complete?	YES	NO	(N/A)

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner	X	X				OK
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	(High)	Low	Last			

TRANSMITTER/HMI DATA

% of Signal Range	Numerical Value	As Found	As Left	HMI
0%	-40	-42		
25%	620	633		
50%	1250	1310		
75%	1940	1992		
100%	2600	2575		

Are all process connections in position to perform their normal function?	(YES)	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	(YES)	NO	N/A
Is the unit in service and ready for operation?	(YES)	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	YES	NO	(N/A)

REMARKS:

SECONDARY PROTECTION:

DESCRIPTION:

VERIFICATION BY:	NAME	SIGNATURE	DATE
CONTRACTOR REPRESENTATIVE	Cory Olson		6/26/23
FIELD REPRESENTATIVE	DERICK KOELZER		6/26/23
HMI REPRESENTATIVE	Todd Kraft		6/26/23

CALIBRATION AND COMMISSIONING FORM

TEMPERATURE TRANSMITTER

Form | Revision | Project

INST TAG:	TIT- 8510			HMI TAG	TIT- 8510				
PLC NAME		ADDRESS		RACK		SLOT		CHNL	
SIGNAL MIN VALUE	-40	ENG UNIT MIN VALUE	-40	SIGNAL MAX VALUE	2500	ENG UNIT MAX VALUE	2500		
TEST TYPE	SCHEDULED	X	REPAIR OR REPLACEMENT		INITIAL INSTALL				
MANUFACTURER	PYROMATION			SERIAL NUMBER	K4028904IE6				
MODEL	411-1KU			RANGE	-40-2500	UNITS	F°		
TEMP ELEM TYPE	K			ELEM RANGE					

Test Equipment

Calibration Equipment: FLUKE 714

Certification Date: _____ SN: _____

Calibration Equipment: _____

Certification Date: _____ SN: _____

Preparation

Has Operations been notified and given permission to proceed with calibration?	(YES)	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	(YES)	NO	N/A
Is the instrument powered?	(YES)	NO	N/A
Is instrument valve isolation complete?	YES	NO	(N/A)

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner	X	X				DK
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	(High)	Low	Last			

TRANSMITTER/HMI DATA

% of Signal Range	Numerical Value	As Found	As Left	HMI
0%	-40	-47		
25%	635	634		
50%	1270	1255		
75%	1905	1885		
100%	2500	2478		

Are all process connections in position to perform their normal function?	(YES)	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	(YES)	NO	N/A
Is the unit in service and ready for operation?	(YES)	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	YES	NO	(N/A)

REMARKS:

SECONDARY PROTECTION:

DESCRIPTION:

VERIFICATION BY:	NAME	SIGNATURE	DATE
CONTRACTOR REPRESENTATIVE	Cory Olson		6/26/23
FIELD REPRESENTATIVE	DERRICK KOELZER		6/26/23
HMI REPRESENTATIVE	Todd Kraft		6/26/23

CALIBRATION AND COMMISSIONING FORM

FLOW TRANSMITTER

Form	
Revision	
Project:	

INST TAG:	FIT- 8130			HMI TAG	FIT- 8130				
PLC NAME	TEG		ADDRESS	RACK		SLOT		CHNL	
SIGNAL MIN. VALUE	0	ENG UNIT MIN VALUE	0	SIGNAL MAX VALUE	30	ENG UNIT MAX VALUE	30		
TEST TYPE	SCHEDULED	X	REPAIR OR REPLACEMENT		INITIAL INSTALL				
MANUFACTURER				SERIAL NUMBER					
MODEL				RANGE		UNITS			
FLOW ELEM TYPE		ELEM RANGE		TEST METHOD					

Test Equipment

Calibration Equipment _____

Certification Date _____ SN _____

Calibration Equipment _____

Certification Date _____ SN _____

Preparation

Has Operations been notified and given permission to proceed with calibration?	(YES)	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	(YES)	NO	N/A
Is the instrument powered?	(YES)	NO	N/A
Is instrument valve isolation complete?	YES	NO	(N/A)

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner			X			DK
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	High	(Low)	Last			

TRANSMITTER/HMI DATA

% of Signal Range	Numerical Value	As Found	As Left	HMI
0%				
25%				
50%				
75%				
100%				

Are all process connections in position to perform their normal function?	(YES)	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	(YES)	NO	N/A
Is the unit in service and ready for operation?	(YES)	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	YES	NO	(N/A)

REMARKS: Shut Flow off to flow meter. meter was reading "0" Flow. lined meter back up and is reading correct

SECONDARY PROTECTION:

DESCRIPTION:

VERIFICATION BY:	NAME	SIGNATURE	DATE
CONTRACTOR REPRESENTATIVE	Cory Olson		6/26/23
FIELD REPRESENTATIVE	Derrick Koelzer		6/26/23
HMI REPRESENTATIVE	Todd Kraft		6/26/23

CALIBRATION AND COMMISSIONING FORM

PRESSURE TRANSMITTER

Form | Revision | Project:

INST TAG:	PIT 3810	HMI TAG	PIT-3810	P&ID #					
PLC NAME	NGL	ADDRESS		RACK		SLOT		CHNL	
SIGNAL MIN VALUE	0	ENG UNIT MIN VALUE	0	SIGNAL MAX VALUE	10	ENG UNIT MAX VALUE	10		
TEST TYPE	SCHEDULED X	REPAIR OR REPLACEMENT		INITIAL INSTALL					
MANUFACTURER	ROSEMOUNT	SERIAL NUMBER	20SHPG0181497						
MODEL	3051TG1A2B21A5SE5M4	RANGE	0-10	UNITS	PSI				

Test Equipment

Calibration Equipment: CRYSTAL
Certification Date: 8/12/22 SN: 350861
Calibration Equipment:
Certification Date: SN:

Preparation

Has Operations been notified and given permission to proceed with calibration?	(YES)	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	(YES)	NO	N/A
Is the instrument powered?	(YES)	NO	N/A
Is instrument valve isolation complete?	(YES)	NO	N/A

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner				X	X	DK
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	High	(Low)	Last			

TRANSMITTER/HMI DATA

% of Signal Range	3% Error Tolerance	Numerical Value	Crystal Value	HMI Value	As Found	As Left
0%		0	0	0		
25%		2.5	2.5	2.4		
50%		5 ~~4.8~~	5	4.8		
75%		7.5	7.5	7.3		
100%		10 ~~9.6~~	10	10.1		

Are all process connections in position to perform their normal function?	(YES)	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	(YES)	NO	N/A
Is the unit in service and ready for operation?	(YES)	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	(YES)	NO	N/A

REMARKS:

Secondary Protection:

Description:

VERIFICATION BY:	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	DERRICK KOELZER		6/26/23
FIELD REPRESENTATIVE 2	Cory Olson		6/26/23
HMI REPRESENTATIVE	Todd Keaft	Todd Keaft	6/26/23

MPLX	CALIBRATION AND COMMISSIONING FORM	Form	
	PRESSURE TRANSMITTER	Revision	
		Project:	

INST TAG:	PIT-7470	HMI TAG	PIT-7470	P&ID #					
PLC NAME	STATION	ADDRESS		RACK		SLOT		CHNL	
SIGNAL MIN VALUE	0	ENG UNIT MIN VALUE	0	SIGNAL MAX VALUE	10	ENG UNIT MAX VALUE	10		
TEST TYPE	SCHEDULED	X	REPAIR OR REPLACEMENT		INITIAL INSTALL				
MANUFACTURER	ROSEMOUNT			SERIAL NUMBER	20SHPG018496				
MODEL	3051TG1A2B21A55ESm4			RANGE	0 - 10	UNITS	PSI		

Test Equipment

Calibration Equipment: CRYSTAL

Certification Date: 8/12/22 SN: 350861

Calibration Equipment:

Certification Date: SN:

Preparation

Has Operations been notified and given permission to proceed with calibration?	(YES)	NO	N/A
Are inhibits in place to prevent an inadvertant shutdown?	(YES)	NO	N/A
Is the instrument powered?	(YES)	NO	N/A
Is instrument valve isolation complete?	(YES)	NO	N/A

ALARM DATA

Alarm	Faulted	LL	L	H	HH	Verifier Initials
Setpoint						
Banner				X	X	OK
Bubble						
Horn (Constant)						
Horn (Hi /Lo)						
Strobe (Blue)						
Strobe (Amber)						
Strobe (Red)						
Open Loop						
Transmitter Fail Value	High	(Low)	Last			

TRANSMITTER/HMI DATA

% of Signal Range	3% Error Tolerance	Numerical Value	Crystal Value	HMI Value	As Found	As Left
0%		0	0			
25%		2.5	2.5	2.1		
50%		5 ~~4.5~~	5	4.8		
75%		7.6	7.5	~~7.6~~ 7.3		
100%		10 ~~9.8~~	10	9.7		

Are all process connections in position to perform their normal function?	(YES)	NO	N/A
Have all PLC/HMI inhibits, isolations and forces been removed?	(YES)	NO	N/A
Is the unit in service and ready for operation?	(YES)	NO	N/A
If the "as found" data exceeded 3% error, did you decrease the calibration frequency by 50% as required?	(YES)	NO	N/A

REMARKS:

Secondary Protection:

Description:

VERIFICATION BY:	NAME	SIGNATURE	DATE
FIELD REPRESENTATIVE 1	DERRICK KOELZER		6/26/23
FIELD REPRESENTATIVE 2	CORY OLSON		6/26/23
HMI REPRESENTATIVE	Todd Kraft		6/26/23