**TITLE: - SOP FOR MAINLINE VALVE INTEGRITY TEST UNDER BARAUNI JURISDICTION.**

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| **SL. NO.** | **ACTIVITY** | **RESPONSIBILITY** |
|  | Mainline block valve integrity to be checked during shutdown of pipeline. Refer SP/ML/39. | Maintenance In-Charge |
|  | Shutdown pressure to be maintained in line with the applicable standard operating procedure for the pipeline. | -Do- |
|  | Work permit to be ensured prior to commencement of integrity tests of mainline block valves as per OISD-105. | -Do- |
|  | Upon pressure stabilization, record the pressure at upstream and downstream end of the pipeline section. | -Do- |
|  | Close the targeted mainline block valve. | -Do- |
|  | Create a differential pressure of 10 Kg/Sq cm across the targeted valve. | -Do- |
|  | Close the Pipeline section at both ends. | -Do- |
|  | Holding period for this test shall be a minimum of two hours. | -Do- |
|  | Pressure recording is to be done at the upstream and the downstream side of the targeted mainline valve at every 15 minutes. The pressure recording is to be done at upstream & downstream side SVs of targeted valve OR upstream & downstream side stations | -Do- |
|  | Plot the readings for Pressure (X & (X-10)) Vs Time. | -Do- |
|  | Once the Mainline integrity test is over, open all MOVS of SVs and line up the respective stations for resuming operations. | -Do- |

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| RECORDS GENERATED : | 1) | SHIFT LOGBOOK SHEET |
|  | 2) | SHIFT HANDING OVER REGISTER |
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|  | **PROCEDURE FOR CHECKING THE INTEGRITY OF MAINLINE VALVES** | **SP/ML/39** |
| **REVISION No** **00** |
| **EFFECTIVE**  **FROM : 01.09.17** |

# Example 1: Upstream Station is at Highest Elevation than the Downstream Location

**1**

**3**

**MBV1**

**Upstream Station**



**1 & 5**

**2 & 6**

**3 & 4**

**: Scrapper Barrel Body Valves**

**: Scrapper Barrel Bypass Valves**

**: Station Limit Valves**

**MBV1, MB2, MB3 : Mainline Block Valves**

**MBV3**

**MBV2**

**2**

**4 5 Downstream Station**

**6**

# Schematic-1.1

* 1. Close Valve No. 1, 2, 5 & 6.
  2. Open Valve No. 3 & 4.
  3. Close **MBV3**. Inform respective Control Room/ SIC.
  4. Crack open Valve no. 6. Depressurise the section pressure by 10 Kg/cm2 of the original shutdown pressure at **Downstream Station** from nearest station piping drain point.
  5. Record the sump tank level for pre-depressurisation/ post-depressurisation.
  6. Close Valve no. 6.
  7. Monitor the pressure at Upstream and Downstream Stations for 1 hour.
  8. Monitor pressure within the station piping and scrapper barrels for any pressure built-up to ensure the integrity of the valve no. 1, 2, 5 & 6.
  9. Station discharge pressure and scrapper launching barrel pressure at upstream station to be recorded at every 15 minutes. Station inlet pressure and scrapper receiving barrel pressure at downstream station to be recorded at every 15 minutes.
  10. Upon completion of integrity checking of **MBV3,** close **MBV2.** Inform respective Control Room/ SIC.
  11. Open **MBV3.** Inform respective Control Room/ SIC.
  12. Repeat steps from (d) to (i)
  13. Upon completion of integrity checking of **MBV2,** close **MBV1.** Inform respective Control Room/ SIC.
  14. Open **MBV2.** Inform respective Control Room/ SIC.
  15. Repeat steps (d) to (i).
  16. Upon completion of integrity checking of **MBV1, Open MBV1.** Inform respective Control Room/ SIC.
  17. Open Valve No. 2 & 6.

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|  | **PROCEDURE FOR CHECKING THE INTEGRITY OF MAINLINE VALVES** | **SP/ML/39** |
| **REVISION No** **00** |
| **EFFECTIVE**  **FROM : 01.09.17** |

# Example 2: Upstream Station is at Lowest Elevation than the Downstream Location

**Downstream Station**

**4**

**5**

**MBV3**

**MBV1**

**MBV2**

**6**

**1 3**

**Upstream Station** **2**

1. **& 5 : Scrapper Barrel Body Valves**
2. **& 6 : Scrapper Barrel Bypass Valves**
3. **& 4 : Station Limit Valves MBV1, MB2, MB3 : Mainline Block Valves**



# Schematic-1.2

* 1. Close Valve No. 1, 2, 5 & 6.
  2. Open Valve No. 3 & 4.
  3. Close **MBV1**. Inform respective Control Room/ SIC.
  4. Crack open Valve 2, depressurise the section pressure by 10 Kg/cm2 of the original shutdown pressure at **Downstream Station** from nearest station piping drain point.
  5. Record the sump tank level for pre-depressurisation/ post- depressurisation.
  6. Close Valve 2.
  7. Monitor the pressure at Upstream and Downstream Stations for 1 hour.
  8. Monitor pressure within the station piping and scrapper barrels for any pressure built-up to ensure the integrity of the valve no. 1, 2, 5 & 6.
  9. Station discharge pressure and scrapper launching barrel pressure at upstream station to be recorded at every 15 minutes. Station inlet pressure and scrapper receiving barrel pressure at downstream station to be recorded at every 15 minutes.
  10. Upon completion of integrity checking of **MBV1,** close **MBV2.** Inform respective Control Room/ SIC.
  11. Open **MBV1.** Inform respective Control Room/ SIC.
  12. Repeat steps from step (d) to step (i).
  13. Upon completion of integrity testing of **MBV2,** close **MBV3.** Inform respective Control Room/ SIC.
  14. Open **MBV2.** Inform respective Control Room/ SIC.
  15. Repeat steps from (d) to (i).
  16. Upon completion of integrity checking of **MBV3, Open MBV3.** Inform respective Control Room/ SIC.
  17. Open Valve No. 2 & 6.