**EQUIPMENT TESTS**

**04/18**

**PROJECT:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**LOCATION:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To be performed after flushing, cleaning, and control valve and electrical component adjustments

**ITEM 1 – R12 (HHT1) CAPABILITIES**

|  |  |
| --- | --- |
| EQUIPMENT – TRUCK NO. \_\_\_\_\_\_\_ | ADJUST AND VERIFY |
| ACTION | VALUE |
| CONTROL VALVE | CLOSURE RATE (SEC), DEADMAN RELEASE |  |
| CONTROL VALVE | NOZZLE PRESSURE SET POINT (PSI) |  |
| CONTROL VALVE | NOZZLE PRESSURE SET POINT (SEC), SURGE |  |
| CONTROL VALVE | CLOSURE RATE (SEC), DURING SURGE |  |
| VENTURI | CALIBRATED TO DESIGN FLOW |  |
| SURGE SUPPRESSOR FRONT | PROPERLY CHARGED AND WORKING |  |
| SURGE SUPPRESSOR REAR | PROPERLY CHARGED AND WORKING |  |
| PRESSURE GAUGE, GROUND NOZZLE | CALIBRATED |  |
| PRESSURE GAUGE, UNDERWING NOZZLE | CALIBRATED |  |
| DEFUEL | FLOW (GPM) |  |
| DEFUEL | PRESSURE (PSI) |  |
| DEFUEL | OPERATION |  |
| HYDRANT PRESSURE GAUGE | CALIBRATED |  |
| AIR SENSE PRESSURE GAUGE | CALIBRATED |  |
| GROUND HOSE 1 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| GROUND HOSE 2 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| GROUND HOSES COMBINED | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSE 1 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSE 2 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSES COMBINED | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| + No tests to be repeated for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 1 – R12 (HHT2) CAPABILITIES**

|  |  |
| --- | --- |
| EQUIPMENT – TRUCK NO. \_\_\_\_\_\_\_ | ADJUST AND VERIFY |
| ACTION | VALUE |
| CONTROL VALVE | CLOSURE RATE (SEC), DEADMAN RELEASE |  |
| CONTROL VALVE | NOZZLE PRESSURE SET POINT (PSI) |  |
| CONTROL VALVE | NOZZLE PRESSURE SET POINT (SEC), SURGE |  |
| CONTROL VALVE | CLOSURE RATE (SEC), DURING SURGE |  |
| VENTURI | CALIBRATED TO DESIGN FLOW |  |
| SURGE SUPPRESSOR FRONT | PROPERLY CHARGED AND WORKING |  |
| SURGE SUPPRESSOR REAR | PROPERLY CHARGED AND WORKING |  |
| PRESSURE GAUGE, GROUND NOZZLE | CALIBRATED |  |
| PRESSURE GAUGE, UNDERWING NOZZLE | CALIBRATED |  |
| DEFUEL | FLOW (GPM) |  |
| DEFUEL | PRESSURE (PSI) |  |
| DEFUEL | OPERATION |  |
| HYDRANT PRESSURE GAUGE | CALIBRATED |  |
| AIR SENSE PRESSURE GAUGE | CALIBRATED |  |
| GROUND HOSE 1 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| GROUND HOSE 2 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| GROUND HOSES COMBINED | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSE 1 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSE 2 | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| UNDERWING HOSES COMBINED | FLOW AND INLET PRESSURE (GPM AND PSI) |  |
| + No tests to be repeated for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 2 – COMPUTER TESTS**

|  |  |
| --- | --- |
| EQUIPMENT | VERIFY |
| ACTION | YES | NO |
| PLC’s | LOGIC IN BOTH PLCs IS EQUAL WHEN COLD STARTED |  |  |
| PLC’s | REMOVE POWER FROM BACKUP PLC. INCREASE RUN TIME ON LEAD PUMP. PROVIDE POWER BACKUP PLC AND WITNESS SYNCING RUN TIME. |  |  |
| PCP COOLING FANS AND THERMOSTAT | PROPER OPERATION |  |  |
| COMPUTER SCREENS, SYSTEM TEST | PRESENT AND OPERATIONAL |  |  |
| ALARM PANEL | ALARMS ARE PRESENTED CORRECTLYEX: PUMP 1 FAILURE DISPLAYED ON ALARM PANEL AND ALARM SCREEN |  |  |
| POWER SUPPLY | BACKUP POWER IS OPERATIONAL WHEN PRIMARY FAILS |  |  |
| BACKUP PLC | SEAMLESS OPERATION WHEN PRIMARY FAILS |  |  |
| PRIMARY PLC (WHEN IN BACKUP MODE) | SEAMLESS OPERATION WHEN BACKUP FAILS |  |  |
| BACKUP INPUT/OUTPUT | SEAMLESS TAKEOVER WHEN PRIMARY FAILS |  |  |
| PRIMARY INPUT/OUTPUT (WHEN IN BACKUP MODE) | SEAMLESS OPERATION WHEN BACKUP FAILS |  |  |
| COMPUTER | PASSWORD PROTECTION |  |  |
| RCC COMPUTER | CONFIRM FUNCTION IS DUPLICATE OF CONTROL ROOM COMPUTER |  |  |
|  |  |  |  |
| + Repeat all tests for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 3 - EMERGENCY SHUTDOWN**

|  |  |  |
| --- | --- | --- |
| EMERGENCY SYSTEM |   | EMERGENCY SYSTEM ACTIVATION  |
| DEVICE LOCATION FOR SHUT DOWN | LOCATION ID LIGHT ILLUMINATED | RED PCP ALARM | EQUIPMENT | VERIFY |
| YES | NO | YES | NO | ACTION | YES | NO |
| PUMPHOUSE 1 |  |  |  |  | FP1 – AUTOMATIC | STOP |  |  |
| PUMPHOUSE 2 |  |  |  |  | FP2 – AUTOMATIC | STOP |  |  |
| PUMPHOUSE 3 |  |  |  |  | FP3 – AUTOMATIC | STOP |  |  |
| CONTROL RM PCP |  |  |  |  | FP4 – AUTOMATIC | STOP |  |  |
| CONTROL RM DOOR |  |  |  |  | FP5 – AUTOMATIC | STOP |  |  |
| HHT |  |  |  |  | FP1 – MANUAL | STOP |  |  |
| TRUCK FILL STAND 1 |  |  |  |  | FP2 – MANUAL | STOP |  |  |
| TRUCK FILL STAND 2 |  |  |  |  | FP3 – MANUAL | STOP |  |  |
| TRUCK OFFLOAD 1 |  |  |  |  | FP4 – MANUAL | STOP |  |  |
| TRUCK OFFLOAD 2 |  |  |  |  | FP5 – MANUAL | STOP |  |  |
| TANK NORTH |  |  |  |  | FTP – AUTOMATIC | STOP |  |  |
| TANK SOUTH |  |  |  |  | FTP – MANUAL | STOP |  |  |
| TANK EAST |  |  |  |  | JP - AUTOMATIC | STOP |  |  |
| TANK WEST |  |  |  |  | JP - HAND | STOP |  |  |
| APRON 1 |  |  |  |  | OP1 | STOP |  |  |
| APRON 2 |  |  |  |  | OP2 | STOP |  |  |
| APRON 3 |  |  |  |  | BOWSER PUMP | STOP |  |  |
| APRON 4 |  |  |  |  | RP-1 | STOP |  |  |
| APRON 5 |  |  |  |  | FSCV – 1 (EMERG SHUTOFF) | SOLENOID DE-ENERGIZED |  |  |
| APRON 6 |  |  |  |  | FSCV – 2 (EMERG SHUTOFF) | SOLENOID DE-ENERGIZED  |  |  |
| EWS |  |  |  |  | FSCV – 3 (EMERG SHUTOFF) | SOLENOID DE-ENERGIZED |  |  |
| FIRE ALARM SYSTEM |  |  |  |  | FSCV – 4 (EMERG SHUTOFF) | SOLENOID DE-ENERGIZED |  |  |
| PRT HIGH-HIGH LEVEL ALARM |  |  |  |  | FSCV – 5 (EMERG SHUTOFF) | SOLENOID DE-ENERGIZED |  |  |
|  |  | + Repeat all tests for Performance Testing |
|  |  | **DATE:** |  |
|  |  | **TIME:** |  |
|  |  | **TEST CONDUCTED BY:** |  |

**ITEM 4 – EMERGENCY EYE WASH AND SHOWER**

| ACTIVITY | VERIFY | OBSERVED |
| --- | --- | --- |
| EYE WASH FLOW | 1.5 GPM |  |
| EYE WASH FLOW | TEMPERED WATER (60-100 DEG F) |  |
| EYE WASH FLOW | RED PCP ALARM  |  |
| SHOWER FLOW | 20 GPM |  |
| SHOWER FLOW | TEMPERED WATER (60-100 DEG F) |  |
| SHOWER FLOW | RED PCP ALARM  |  |
| CIRCULATING PUMP | FLOW |  |
| + Repeat alarms for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 5 – OPERATING TANKS**

| OPERATING TANK NO. 1 |
| --- |
| TANK LIQUID LEVEL ELEVATION | PUMP NO. | ACTIVITY | YES | NO |
|  |  | HHLA (RED PCP ALARM) AND RECEIPT PUMP SHUT DOWN |  |  |
|  |  | HIGH LEVEL VALVE (HLV) CLOSURE |  |  |
|  |  | HLA (WHITE PCP ALARM) |  |  |
|  |  | LLA (WHITE PCP ALARM) |  |  |
|  |  | LLLA (RED PCP ALARM) AND ISSUE PUMP SHUT DOWN |  |  |
| NA | NA | LLLA AND RECEIPT VALVE CLOSED (TANK CLEANING) ALARM CLEARS |  |  |
| NA | NA | WATER DRAW OFF SYSTEM PUMP ON/OFF |  |  |
| + Repeat all tests for Performance Testing Use fuel tank level in the tank for all tests, use exterior manual testing as a last resort.  |
|  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 5 – OPERATING TANKS**

| OPERATING TANK NO. 2 |
| --- |
| TANK LIQUID LEVELELEVATION | PUMP NO. | ACTIVITY | YES | NO |
|  |  | HHLA (RED PCP ALARM) AND RECEIPT PUMP SHUT DOWN |  |  |
|  |  | HIGH LEVEL VALVE (HLV) CLOSURE |  |  |
|  |  | HLA (WHITE PCP ALARM) |  |  |
|  |  | LLA (WHITE PCP ALARM) |  |  |
|  |  | LLLA (RED PCP ALARM) AND ISSUE PUMP SHUT DOWN |  |  |
| NA | NA | LLLA AND RECEIPT VALVE CLOSED (TANK CLEANING) ALARM CLEARS |  |  |
| NA | NA | WATER DRAW OFF SYSTEM PUMP ON/OFF |  |  |
| + Repeat all tests for Performance Testing Use fuel tank level in the tank for all tests, use exterior manual testing as a last resort.  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 6 – FIRE ALARM**

| ACTIVITY | VERIFY | YES | NO |
| --- | --- | --- | --- |
| PULL STATION | ALARM (RED PCP ALARM) |  |  |
| PULL STATION | REPORTED TO FIRE DEPARTMENT |  |  |
| SMOKE DETECTOR | ALARM (RED PCP ALARM) |  |  |
| SMOKE DETECTOR | REPORTED TO FIRE DEPARTMENT |  |  |
| HEAT DETECTOR | ALARM (RED PCP ALARM) |  |  |
| HEAT DETECTOR | REPORTED TO FIRE DEPARTMENT |  |  |
| + Repeat all tests for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 7 – PRODUCT RECOVERY TANK**

| TANK VOLUME | TANK LIQUID LEVEL ELEVATION | ACTIVITY | YES | NO |
| --- | --- | --- | --- | --- |
| > 95% |  | OV-1 CLOSES (WHITE PCP ALARM) |  |  |
| > 90% |  | HHLA (RED PCP ALARM) AND EMERGENCY SYSTEM ACTIVATION |  |  |
| > 85% |  | HLA (WHITE PCP ALARM) |  |  |
| > 70% |  | PUMP (FTP-1) START |  |  |
| < 20% |  | PUMP (FTP-1) STOP |  |  |
| NA | NA | WATER DRAW-OFF PUMP ON/OFF |  |  |
| NA | NA | RP-1 ON/OFF |  |  |
| NA | NA | LEAK DETECTION |  |  |
| + Repeat all tests for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 8 – FOUR VALVE MANIFOLD**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TANK 1 | TANK 2 | SELECTOR SWITCH AUTO MODE | SELECTOR SWITCH TEST MODE | SELECTOR SWITCH FLUSH MODE |
| TANK ISSUE | 4-WAY | TANK ISSUE | 4-WAY |
| VALVE I1 | RETURN VALVE I34 | SYS RECEIPT VALVE R10 | VALVE I2 | RETURN VALVE I35 | SYS RECEIPT VALVE R11 | VERIFY | Y | N | Verify | Y | N | Verify | Y | N |
| OPEN | CLOSED | OPEN | CLOSED | CLOSED | CLOSED | NO ALARM |   |   | NO ALARM |   |   | NO ALARM |   |   |
| OPEN | CLOSED | OPEN | CLOSED | OPEN | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| OPEN | CLOSED | OPEN | CLOSED | OPEN | OPEN | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| OPEN | CLOSED | CLOSED | CLOSED | OPEN | OPEN | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| OPEN | CLOSED | CLOSED | CLOSED | OPEN | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| OPEN | OPEN | CLOSED | CLOSED | CLOSED | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| OPEN | OPEN | CLOSED | CLOSED | CLOSED | OPEN | NO ALARM |   |   | NO ALARM |   |   | NO ALARM |   |   |
| CLOSED | CLOSED | CLOSED | OPEN | CLOSED | OPEN | NO ALARM |   |   | NO ALARM |   |   | NO ALARM |   |   |
| CLOSED | OPEN | CLOSED | OPEN | CLOSED | OPEN | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| CLOSED | OPEN | OPEN | OPEN | CLOSED | OPEN | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| CLOSED | OPEN | OPEN | OPEN | CLOSED | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| CLOSED | OPEN | CLOSED | OPEN | CLOSED | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| CLOSED | CLOSED | CLOSED | OPEN | OPEN | CLOSED | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| CLOSED | CLOSED | OPEN | OPEN | OPEN | CLOSED | NO ALARM |   |   | NO ALARM |   |   | NO ALARM |   |   |
| \* |   |   |   |   |   | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| \* |   |   |   |   |   | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| + |   |   |   |   |   | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| + |   |   |   |   |   | ALARM |   |   | ALARM |   |   | NO ALARM |   |   |
| \* Additional random selection of valve position by the System Supplier during Equipment Tests+ Repeat three tests (selected by Government Witness) during Performance Testing + Additional random selection of valve positions by the Government Witness during Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 9 – TIGHTNESS MONITORING SYSTEM**

| SECTION TESTED | PASS/FAIL | DURATION (MINUTES) | DETECTED LEAK RATE |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |
| + Initiate test and run for 15 minutes for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 10 – FUEL PUMPS**

| PUMP NO. | PROPER ROTATION W/PRIMARY POWER | PROPER ROTATION W/BACKUP POWER | SHUT DOWN WITH NO FLOW |
| --- | --- | --- | --- |
| YES | NO | YES | NO | YES  | NO |
| FP-1 |  |  |  |  |  |  |
| FP-2 |  |  |  |  |  |  |
| FP-3 |  |  |  |  |  |  |
| FP-4 |  |  |  |  |  |  |
| FP-5 |  |  |  |  |  |  |
| FTP-1 |   |  |  |  |  |  |
| RP-1 |  |  |  |  | NA | NA |
| JP |  |  |  |  |  |  |
| OP-1 |  |  |  |  |  |  |
| OP-2 |  |  |  |  |  |  |
| BOWSER PUMP |  |  |  |  |  |  |
| + Repeat two tests (selected by Government Witness) for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 11 - FUELING PUMP OPERATION - AUTOMATIC MODE**

**SELECTED MICROPROCESSOR 1**

**SELECTED LEAD PUMP FP-1**

**XXX-XXX SETPOINT RANGE**

**{XXX} DEFAULT VALUE**

**[\_\_\_\_\_] CURRENT VALUE**

| Measuring Device | LeadPump Start | Second Pump Start | Third Pump Start | Fourth Pump Start | Fourth Pump Stop | Third Pump Stop | Second Pump Stop | Lead Pump Stop |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PIT-1 | 30-150 PSIG{60} PSIG[**\_\_\_\_\_]**  PSIG |  |  |  |  |  |  | 130-190 PSIG{140} PSIG[\_\_\_\_\_] PSIG |
| Issue Venturi DPT-1 |  | 450-650 GPM{> 560} GPM[\_\_\_\_\_] GPM | 1000-1300 GPM{> 1160} GPM[\_\_\_\_\_]GPM | 1600-1900 GPM{>1760} GPM[\_\_\_\_\_]GPM |  |  |  |  |
| Return Venturi DPT - 3 |  | 10-100 GPM {< 40} GPM[\_\_\_\_]GPM | 10-100 GPM{< 40} GPM[\_\_**\_\_]** GPM | 10-100 GPM{< 40} GPM[\_\_\_\_]GPM  | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM |
| + Not required for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 11 - FUELING PUMP OPERATION - AUTOMATIC MODE**

**SELECTED MICROPROCESSOR 1**

**SELECTED LEAD PUMP FP- [Contracting Officer Choice]**

**XXX-XXX SETPOINT RANGE**

**{XXX} DEFAULT VALUE**

**[\_\_\_\_\_] CURRENT VALUE**

| Measuring Device | LeadPump Start | Second Pump Start | Third Pump Start | Fourth Pump Start | Fourth Pump Stop | Third Pump Stop | Second Pump Stop | Lead Pump Stop |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PIT-1 | 30-150 PSIG{60}PSIG[**\_\_\_\_\_]**  PSIG |  |  |  |  |  |  | 130-190 PSIG{140} PSIG[\_\_\_\_\_] PSIG |
| Issue Venturi DPT-1 |  | 450-650 GPM{> 560} GPM[\_\_\_\_\_] GPM | 1000-1300 GPM{> 1160} GPM[\_\_\_\_\_]GPM | 1600-1900 GPM{>1760} GPM[\_\_\_\_\_]GPM |  |  |  |  |
| Return Venturi DPT - 3 |  | 10-100 GPM{< 40} GPM[\_\_\_\_]GPM | 10-100 GPM{< 40} GPM[\_\_**\_\_]** GPM | 10-100 GPM{< 40} GPM[\_\_\_\_]GPM  | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM |
| + Repeat during Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 11 - FUELING PUMP OPERATION - AUTOMATIC MODE**

**SELECTED MICROPROCESSOR 2**

**SELECTED LEAD PUMP FP- [Contracting Officer Choice]**

**XXX-XXX SETPOINT RANGE**

**{XXX} DEFAULT VALUE**

**[\_\_\_\_\_] CURRENT VALUE**

| Measuring Device | LeadPump Start | Second Pump Start | Third Pump Start | Fourth Pump Start | Fourth Pump Stop | Third Pump Stop | Second Pump Stop | Lead Pump Stop |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PIT-1 | 30-150 PSIG{60} PSIG[**\_\_\_\_\_]**  PSIG |  |  |  |  |  |  | 130-190 PSIG{140} PSIG[\_\_\_\_\_] PSIG |
| Issue Venturi DPT-1 |  | 450-650 GPM{> 560} GPM[\_\_\_\_\_] GPM | 1000-1300 GPM{> 1160} GPM[\_\_\_\_\_]GPM | 1600-1900 GPM{>1760} GPM[\_\_\_\_\_]GPM |  |  |  |  |
| Return Venturi DPT - 3 |  | 10-100 GPM{< 40} GPM[\_\_\_\_]GPM | 10-100 GPM{< 40} GPM[\_\_**\_\_]** GPM | 10-100 GPM{< 40} GPM[\_\_\_\_]GPM  | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM | 500-800 GPM{> 560} GPM[\_\_\_\_\_] GPM |
| + Not required for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 12 – TRUCK OFFLOAD SKID**

| SKID 1 |
| --- |
| ACTIVITY | YES | NO |
| Air Eliminator fills completely when truck connects |  |  |
| Offload pump is enabled when Low Sensor is exceeded |  |  |
| Offload pump is disabled when Scully is disconnected |  |  |
| Pump de-energized upon no flow |  |  |
| Manual stop will de-energize pump |  |  |
| Offload rate begins at 600 gpm |  |  |
| Offload slows to 300 gpm when level drops below Upper Sensor |  |  |
| Offload rate slows to 150 gpm when level drops below Middle Sensor |  |  |
| Offload pump stops when level drops below Low Sensor |  |  |
| + Repeat all tests for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 13 – TRUCK OFFLOAD SKID**

| SKID 2 |
| --- |
| ACTIVITY | YES | NO |
| Air Eliminator fills completely when truck connects |  |  |
| Offload pump is enabled when Low Sensor is exceeded |  |  |
| Offload pump is disabled when Scully is disconnected |  |  |
| Pump de-energized upon no flow |  |  |
| Manual stop will de-energize pump |  |  |
| Offload rate begins at 600 gpm |  |  |
| Offload slows to 300 gpm when level drops below Upper Sensor |  |  |
| Offload rate slows to 150 gpm when level drops below Middle Sensor |  |  |
| Offload pump stops when level drops below Low Sensor |  |  |
| + Repeat all tests for Performance Testing  |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 14 – HYDRANT/TRUCK FILL/HHT CONTROL VALVES**

| Hydrant Control Valve(HCV) No. | HCV Size (Inch) | HCV Inlet Pressure (PSIG) | HCV Outlet Pressure (PSIG) | HCV Deadman Closure Rate (SEC) | HCV Max OutletPressureDuring Surge\* (PSIG) | HCVFlowRate(GPM) | Nozzle\* OutletPressure (PSIG) |
| --- | --- | --- | --- | --- | --- | --- | --- |
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|  |  |  |  |  |  |  |  |
| Nozzle\* - Nozzle outlet pressure (skin of the aircraft 45 psi, skin of the truck 35)Surge\* (50 psi max aircraft, 40 truck) - Simulate surge by closing truck valve using a 3 second countOne pump in operation+ All control valves to be witnessed during Performance Testing |
| **DATE:** |  |  |  |  |  |  |
| **TIME:** |  |  |  |  |  |  |
| **TEST CONDUCTED BY:** |  |  |  |  |  |  |

**ITEM 15 - FLUSHING**

| FLUSH MODE |
| --- |
| OPERATINGTANK NO. \_\_\_\_\_ LEVEL-START | OPERATINGTANK NO. \_\_\_\_\_ LEVEL-FINISH | PRESSURE GAGE READING AT DEFUEL/FLUSH VALVE (PSIG) | HYDRANT LOOPFLUSH VELOCITY (FPS) | NUMBER OF PUMPS OPERATING |
|  |  |  |  | 1 |
|  |  |  |  | 2 |
|  |  |  |  | 3 |
|  |  |  |  | 4 |
|  |  |  |  | 5 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  + Repeat for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 16 - DEFUELING PERFORMANCE**

| AUTOMATIC MODE (WITH ONE OR MORE ISSUE PUMPS IN OPERATION) |
| --- |
| HYDRANT CONTROL VALVE (HCV) NO. | DEFUEL FLOW RATE (GPM) | FUELING PUMP NO. | FLOW RATE THRU ISSUE VENTURI(GPM) | HYDRANT LOOP ISSUE PRESSURE PIT-1 (PSIG) | FLOW RATE THRU RETURN VENTURI (GPM) |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |
| + Repeat defuel during Performance Testing at one of the hydrant pits as selected by the Government Witness |
| **DATE:** |  |  |
| **TIME:** |  |  |
| **TEST CONDUCTED BY:** |  |  |

**ITEM 16 - DEFUELING PERFORMANCE**

| FLUSH (DEFUEL) MODE |
| --- |
| HYDRANT CONTROL VALVE (HCV) NO. | DEFUEL FLOW RATE (GPM) | HYDRANT LOOP ISSUE PRESSURE PIT-1 (PSIG) | FLOW RATE THRU RETURN VENTURI (GPM) |
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|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |
| + Repeat defuel during Performance Testing at one of the hydrant pits as selected by the Government Witness |
| **DATE:** |  |  |
| **TIME:** |  |  |
| **TEST CONDUCTED BY:** |  |  |

**ITEM 17 - FILTER SEPARATOR FLOAT CONTROL VALVE MANUAL TEST**

|  |  |
| --- | --- |
| FILTER SEPARATOR | FILTER SEPARATOR CONTROL VALVE WATER SLUG FEATURE OPERATION |
| YES | NO |
| FSI – 1 |  |  |
| FSI – 2 |  |  |
| FSI – 3 |  |  |
| FSI – 4 |  |  |
| FSI – 5 |  |  |
| FSR – 1 |  |  |
| FSR – 2 |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| + Repeat for Performance Testing |
| **DATE:** |  |
| **TIME:** |  |
| **TEST CONDUCTED BY:** |  |

**ITEM 18 – FUEL SAMPLING RESULTS**

| SAMPLING LOCATION | COLOR (PASS/FAIL) | PARTICULATE (MG/GALLON) | FREE WATER (PPM) |
| --- | --- | --- | --- |
| Issue Filter Separator Receipt |  |  |  |
| Pumphouse Return |  |  |  |
| Hydrant Outlet (30% of the outlets) |  |  |  |
| Truck Fill Stand |  |  |  |
| HHT Check Out Station |  |  |  |
| Tank 1 |  |  |  |
| Tank 2 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| < 2 mg/gallon particulates<10 ppm free water |
|  | QUANTITY(GALLONS) |
| Contaminated Fuel |  |
| **DATE:** |  |  |
| **TIME:** |  |  |
| **TEST CONDUCTED BY:** |  |  |

|  |
| --- |
| I certify that the values recorded in Items 1-17 are accurate and correct. (To be signed by System Supplier during Equipment Tests) |
| DATE: |  |
| SIGNATURE: |  |
| ORGANIZATION: |  |

|  |
| --- |
| I witnessed designated (+) Equipment Tests during Performance Testing. (To be signed by Government Witness(es) during Performance Testing) |
| DATE: |  |
| SIGNATURE: |  |
| ORGANIZATION: |  |

**PERSONNEL PRESENT DURING PERFORMANCE TESTING**

| **NAME** | **ORGANIZATION** | **COMMERCIAL PHONE NO.** |
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REMARKS:

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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSI-1**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSI-2**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSI-3**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSI-4**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSI-5**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSR-1**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE:

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| 25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 0 |  |  |  |  | 5 |  |  |  |  | 10 |  |  |  |  | 15 |  |  |  |  | 20 |

**PRESSURE DROP IN POUNDS PER SQUARE IN (PSI)**

**CLEANING OPERATION DAILY FLOW VS. PRESSURE DROP GRAPH FOR FILTER SEPARATOR NO. FSR-2**

\* ELEMENT CHANGE CRITERIA: (1) When pressure drop across filter separator reaches 15 PSI

 (2) When pressure drop is less than previous plot or fails to increase properly

STARTING DATE: SIGNATURE: