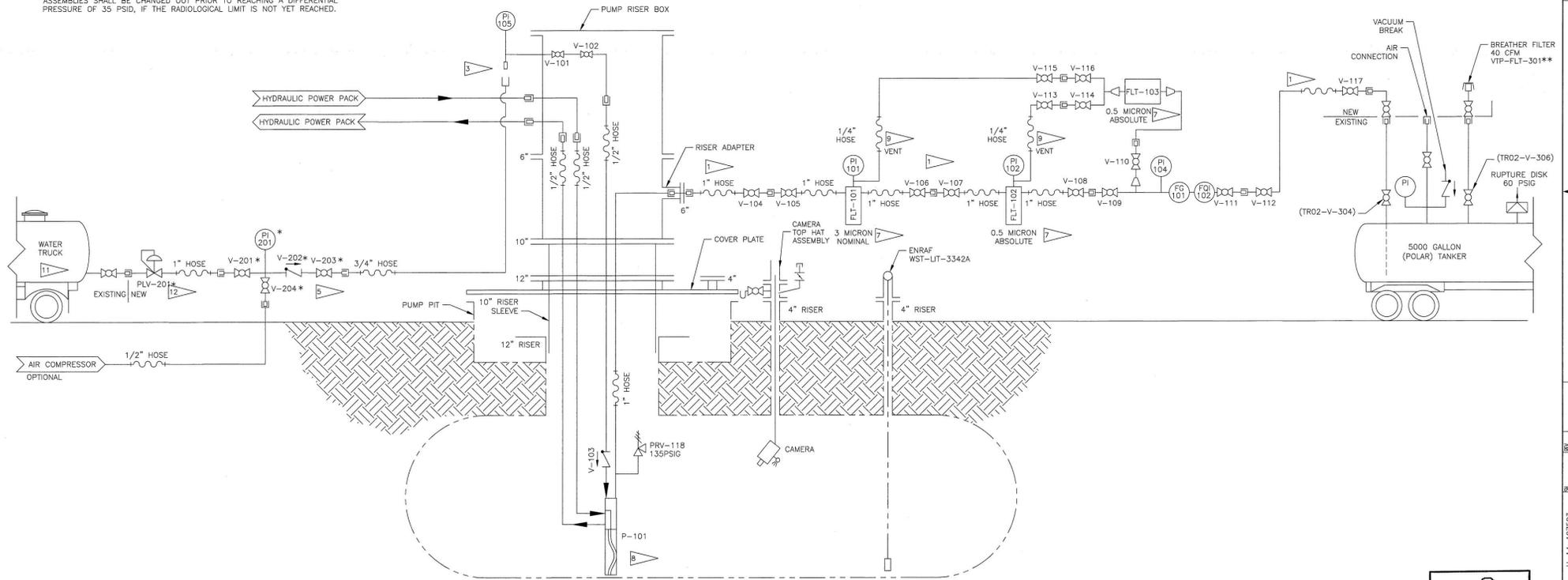


GENERAL NOTES: (UNLESS OTHERWISE SPECIFIED)

- 1 ALL WASTE TRANSFER HOSES ARE TO BE SLEEVED TO CONTAIN ANY POTENTIAL LEAKAGE AND ALLOW FOR VISUAL INSPECTION DURING TRANSFER. SLEEVING TO BE TRANSLUCENT POLYURETHANE WITH A MINIMUM TOTAL THICKNESS OF 20 MIL, SINGLE OR MULTIPLE LAYERS ARE ACCEPTABLE (8 MIL LAYER ON HOSE TO ALLOW HANDLING FLEXIBILITY SHALL INCLUDE A MINIMUM SLIDE LAYER THICKNESS OF 12 MIL AT GROUND CONTACT AREAS). SLEEVING IS TO BE INSTALLED AND SLOPED TOWARDS CATCH CONTAINMENT LOCATED BELOW THE VALVE MANIFOLD/FILTERS.
- 2 LIQUID FILLED LINES AND EQUIPMENT ARE NOT INSULATED OR HEAT TRACED. LINES ARE TO BE DRAINED AND AIR PURGED IN THE EVENT OF PENDING FREEZING WEATHER CONDITIONS.
- 3 FLUSH/PURGE CONNECTION TO REMAIN PHYSICALLY DISCONNECTED DURING PUMPING OPERATIONS. FLUSHING TO OCCUR WITH PUMPS HYDRAULIC POWER PACK UNDER ADMINISTRATIVE LOCK.
- 4 PREFIX LIQUID PUMPING SYSTEM EQUIPMENT IDENTIFICATION NUMBERS (EIN) WITH "S302-WT-"; E.G. S302-WT-V-101. NO EINS ARE ASSIGNED TO SUPPORT EQUIPMENT, INCLUDING WATER TRUCK.
- 5 PREFIX LIQUID PUMPING SYSTEM EQUIPMENT IDENTIFICATION NUMBERS (EIN) SHOWN WITH AN ASTERISK (*) AS "S302-RW-" E.G. S302-RW-V-201.
- 6 PIPING/HOSING DESIGN PRESSURE 150 PSIG @ 200°F. THE PRESSURE LIMITING COMPONENT IS THE FILTER CANISTER WITH A PRESSURE RATING OF 150 PSIG @250°F. OTHER INDIVIDUAL COMPONENTS ARE SUBJECT TO HIGHER DESIGN PRESSURES OF 250 PSIG TO SUPPORT SYSTEM OPERATION WITHOUT FILTRATION. HOSE DESIGN PRESSURE 150 PSIG @ 150°F FOR TANKER OFF-LOAD. TANKER TO INITIALLY BE PRESSURIZED TO 15 PSIG FOR PNEUMATIC ASSISTANCE. ELEVATED DESIGN PRESSURE APPLIED TO ENSURE ADEQUATE SAFETY MARGIN.
- 7 THE PROCESS STREAM FILTER ASSEMBLIES ARE TO BE MONITORED DURING THE PUMPING PROCESS TO ENSURE THE DIFFERENTIAL PRESSURE FOR THE FILTER TRAIN IS MAINTAINED BELOW 60 PSID, AND A MAXIMUM OF 35 PSID FOR FLT-101, FLT-102, OR FLT-103, AND THE ACCUMULATED RADIOACTIVE INVENTORY IS MAINTAINED BELOW TARGET LEVELS ESTABLISHED IN THE WORK PACKAGE. TO ENSURE THE FILTERS OPERATING EFFICIENCY THE FILTER ASSEMBLIES SHALL BE CHANGED OUT PRIOR TO REACHING A DIFFERENTIAL PRESSURE OF 35 PSID, IF THE RADIOLOGICAL LIMIT IS NOT YET REACHED.

- 8 INITIAL INSTALLATION LOCATION OF PUMP INLET IS APPROXIMATELY SIX INCHES ABOVE THE TANK SOLIDS LEVEL. OPERATION AT THIS HEIGHT WILL ASSIST IN MINIMIZING SOLIDS DISTURBANCE AND TRANSFER VIA THE PUMP. PUMP DISCHARGE RATE TO BE REDUCED AS PUMP INLET IS LOWERED TO SOLIDS INTERFERENCE VIA PUMP RISER BOX HEIGHT ADJUSTER IN AN EFFORT TO REMOVE MAXIMUM AMOUNT OF FREE LIQUID.
- 9 VENT LINE PROVIDED TO MAXIMIZE EXPOSED SURFACE AREA OF FILTERS TO PUMPED MEDIA BY ALLOWING TRAPPED AIR TO BE REMOVED. MINIMIZE VENTING OPERATION OF POTENTIALLY TRAPPED AIR BY VISUALLY INSPECTING VENT STREAM AT FG-101. VENTED LIQUID BYPASSES THE INTERNAL FILTRATION PROCESS AND COULD LEAD TO EXCESSIVE SOLIDS LOADING OF VENT FILTER FLT-103 IF EXCESSIVE VENTING IS PERFORMED.
- 10 PRIOR TO INITIAL SYSTEM START UP, OR FOLLOWING FILTER ASSEMBLY REPLACEMENT, PERFORM AN APPROXIMATE 20 GALLON IN-SERVICE FLUSH TO ENSURE ALL HOSE CONNECTIONS ARE PROPERLY SECURED, ALSO, ENSURE FILTER ASSEMBLIES FLT-101 AND FLT-102 ARE VENTED OF ENTRAINED AIR.
- 11 FILTERED WATER SHOULD BE USED FOR FLUSHING THE 240-S-302 PUMPING SYSTEM TO PREVENT EXCESSIVE LOADING OF THE FILTER ASSEMBLY ELEMENTS DUE TO POTENTIAL DEBRIS IN UNFILTERED SITE RAW WATER.
- 12 TO PREVENT WATER ADDITION TO 240-S-302 THROUGH THE PUMP ASSEMBLY RELIEF VALVE, ADJUST PLV-201 BETWEEN 75-125 PSI TO LIMIT THE SUPPLY PRESSURE FROM THE WATER TRUCK DURING FLUSHING.
- 13 PREFIX POLAR TANKER BREAKER ASSEMBLY EQUIPMENT IDENTIFICATION NUMBER (EIN) SHOWN WITH A DOUBLE ASTERISK (**) AS "H0-64-4275-" E.G. H0-64-4275-WT-V-301.

14. SYSTEM AIR PURGE SHOULD INITIALLY BE PERFORMED AT 40 PSIG TO PREVENT POTENTIAL DAMAGE TO FILTER ELEMENTS. FLT-101 FILTER ELEMENTS ARE RATED FOR A MAXIMUM DIFFERENTIAL PRESSURE OF 70 PSID. FLT-102 FILTER ELEMENTS ARE RATED FOR A MAXIMUM DIFFERENTIAL PRESSURE OF 50 PSID. INCREASED AIR PRESSURE MAY BE NECESSARY DEPENDING UPON THE INVENTORY OF SOLIDS LOADING AND DIFFERENTIAL PRESSURE OBSERVED DURING PUMPING OPERATIONS ACROSS FLT-101 AND FLT-102. ENSURE TANKER AND 240-S-302 BREATHER FILTERS ARE INSTALLED PER WORK PACKAGE CONTROLS PRIOR TO PERFORMING SYSTEM FLUSH OR AIR PURGE.
15. FOR PROCESS DESCRIPTION AND CONTROL PLAN SEE RPP-PLAN-36701.
16. PRIOR TO PERFORMING AN AIR PURGE THE SYSTEM SHALL BE FLUSHED WITH WATER AT OR ABOVE THE CALCULATED CRITICAL VELOCITY (6.5 GPM) FOR THE 6" HOSES, FOR A MINIMUM OF THREE TIMES THE PUMPING SYSTEM CAPACITY (60 GALLONS). THE FLUSH OPERATING PRESSURE SHALL NOT EXCEED THE DEVELOPMENT OF EITHER A DIFFERENTIAL PRESSURE OF 70 PSID ACROSS FLT-101 OR 50 PSID ACROSS FLT-102, REPRESENTING THE FILTER MANUFACTURERS MAXIMUM RECOMMENDED DIFFERENTIAL PRESSURE. ACTUAL FLUSH PRESSURE TO ACHIEVE CRITICAL VELOCITY IS DEPENDANT UPON SOLIDS LOADING AND DIFFERENTIAL PRESSURE ACROSS FLT-101 AND FLT-102. TO SUPPORT CRITICAL VELOCITY FLUSHING THE MAXIMUM SYSTEM DIFFERENTIAL PRESSURE ACROSS FLT-101 AND FLT-102 WHILE PUMPING IS LIMITED TO A COMBINED 60 PSID, AND A MAXIMUM OF 35 PSID ACROSS EITHER SINGLE FILTER ASSEMBLY. THE INITIAL FLUSH SHOULD OCCUR AT 75 PSIG AND BE SLOWLY INCREASED UP TO A MAXIMUM OF 125 PSIG TO ACCOUNT FOR SOLIDS LOADING AND FILTER ASSEMBLY DIFFERENTIAL PRESSURES TO ACHIEVE THE CRITICAL VELOCITY FLUSH WITHOUT EXCEEDING THE MANUFACTURERS MAXIMUM DIFFERENTIAL ACROSS EITHER FLT-101 OR FLT-102.
17. AT THE FILTER SKID PLASTIC SHEETING WILL BE USED TO DIRECT DRIPS/SPRAY INTO THE CATCH CONTAINMENT.



PUMPING CONFIGURATION (240-S-302)

DATE: APR 15 2008
 BY: J.T. FOSS
 REVISED: 018

NAME	DATE	DESCRIPTION
J.T. FOSS		

U.S. DEPARTMENT OF ENERGY
 Office of River Protection
240-S-302
 LIQUID PUMPING SYSTEM
 P&ID

REV	NO	DATE	BY	APP	DESCRIPTION
1	2405	7005	H-14-107503		

ISSUED BY: J.T. FOSS
 CHECKED BY: J.T. FOSS
 SCALE: NONE
 EST: 822707
 SHEET: 1 OF 2
 DOC. NO. P&ID (01-01)

DWG NO	TITLE	REF NUMBER	TITLE	DESCRIPTION	REV	DATE	APP	COMMENTS
H-14-107502	DRAWING TREE							
DRAWING TRACEABILITY LIST		NEXT USED ON		END ITEM				

H-14-107503 018