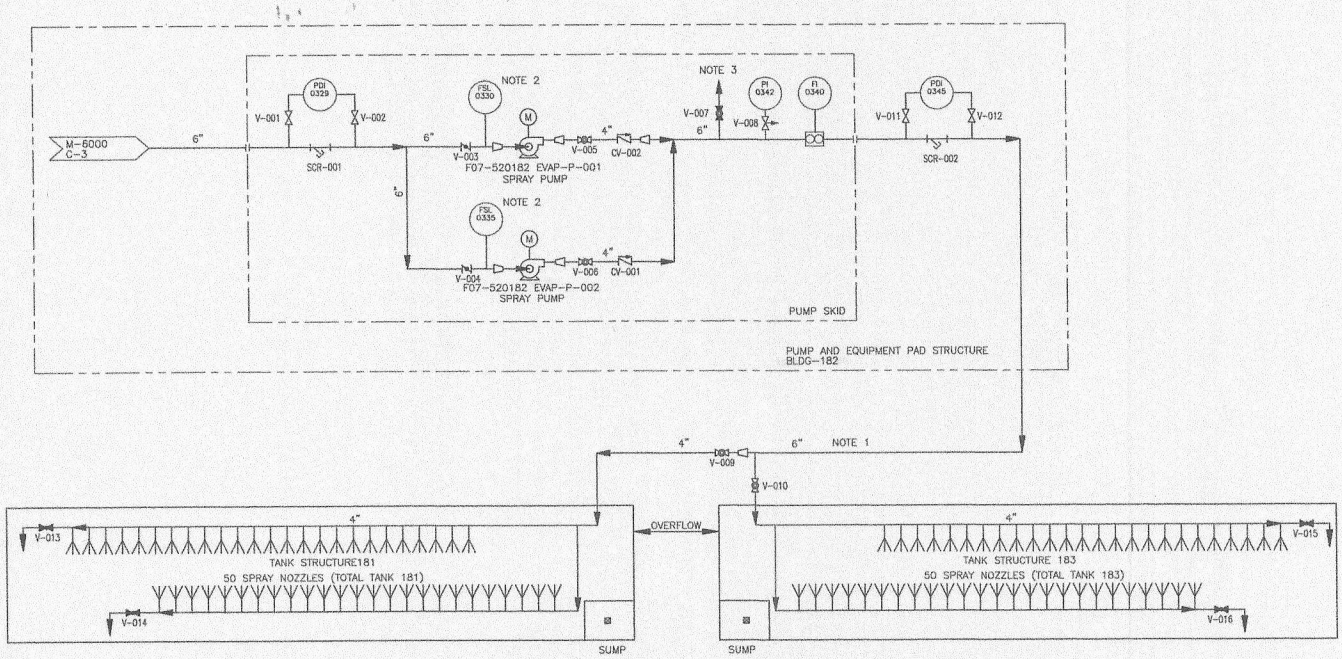

TA-52 SITE
SPRAY SYSTEM FOR EVAPORATION TANKS

SCALE: NONE

GENERAL NOTES:

1. HEAT TRACE ABOVE GROUND PIPING ONLY AS REQUIRED. SEE DRAWING M-1014.
2. LOW FLOW SWITCH WILL CAUSE PUMP TO TRIP IF PUMP FLOW DROPS OR RUNS DRY (AFTER DELAY).
3. SPRAY NOZZLE HEADERS ARE TO BE FREE DRAINING. LOCATE 3/4" VENT WITH GLOBE VALVE AT HIGH POINT OF SPRAY PIPING AND 3/4" DRAINS AS REQUIRED ON SPRAY HEADERS AT LOW POINTS. SPRAY PIPING HIGH POINT VENT SHALL BE LOCATED NEAR PUMPS.
4. ALL VALVES ON THIS DRAWING HAVE A PREFIX OF "EVAP" (i.e. EVAP-V-001).
5. SEE "BILL OF MATERIALS" DRAWINGS M-7000 & M-7001 FOR DETAILS AND REQUIREMENTS FOR INSTRUMENTS, EQUIPMENT & SPECIALTY ITEMS.
6. SEE "VALVE SCHEDULES" DRAWING M-7002 FOR DETAILS AND REQUIREMENTS FOR VALVES.

SEQUENCE OF OPERATION:

NOZZLES:

VEEJET SPRAY (FLAT FAN PATTERN NOZZLES), AS MANUFACTURED BY SPRAYING SYSTEMS. COMPLETE WITH ADJUSTABLE BALL FITTINGS (TOTAL 100 REQUIRED).

SPRAY PUMPS:

LOW FLOW SWITCHES FSL-0330 OR FSL-0335 WILL CAUSE THE PUMP P-001 OR P-002 TO TRIP IF THE RESPECTIVE PUMP FLOW DROPS OR RUNS DRY (AFTER DELAY). MANUAL OPERATION WHEN SPRAYING IS REQUIRED TO ENHANCE EVAPORATION. ONE PUMP WILL BE UTILIZED FOR SPRAYING ONE TANK. EITHER PUMP CAN BE USED FOR EITHER TANK THROUGH VALVE LINE UPS. SYSTEM IS DESIGNED FOR SPRAYING BOTH TANKS SIMULTANEOUSLY. STARTING AND STOPPING OF ONE OR BOTH SPRAY PUMPS IS A MANUAL OPERATION VIA A LOCAL START/STOP PUSH BUTTON. LOW FLOW OR NO FLOW WILL CAUSE A PUMP OR PUMPS TO TRIP IF TANK OR TANKS RUN(S) DRY (AFTER DELAY). TO WINTERIZE SPRAY SYSTEM AND SHUTDOWN THE EVAPORATION SPRAY SYSTEM, MAKE SURE ALL SYSTEM VALVES ARE OPEN, INCLUDING NORMALLY CLOSED VENT VALVE (V-007) AND NORMALLY CLOSED SPRAY HEADER VALVES (V-013, V-014, V-015, AND V-016) TO ALLOW FOR FREE DRAINING OF THE SPRAY HEADERS AND NOZZLES. OPERATION OF THE SPRAY PUMPS WITH COINCIDENT OPERATION OF THE TRANSFER PUMP IS NOT A SYSTEM REQUIREMENT. THEREFORE, THE SPRAY PUMPS SHOULD NOT BE OPERATED WHEN THE TRANSFER PUMP IS OPERATING. DOORS SHALL BE LEFT OPEN DURING OPERATION (RUNNING) OF ONE OR BOTH OF THE SPRAY PUMPS.

NO	DATE	CLASS REV	ADC	DESCRIPTION	DWN	DSGN	CHKD	SUB	APP
2	6/22/12			RECORD DRAWING REFLECTING CONTRACTOR REPORTED FIELD CHANGES.	TJH	SPS	SPS	NL	
1	4/25/12			REVISED SEQUENCE OF OPERATION FOR SPRAY PUMPS.	TJH	TJH	SPS		

ZERO LIQUID DISCHARGE SUBPROJECT

ZERO LIQUID DISCHARGE EVAPORATION SPRAY SYSTEM P&ID AND SEQUENCE OF OPERATION

BLDG 181,182,183 TA-50 TA-52, TA-63

DRAWN	T. HARPER
DESIGN	S. STUHRKE
CHECKED	S. STUHRKE
DATE	09/21/2011

SUBMITTED: NORMAN LACY

APPROVED FOR RELEASE: JOSEPH BROPHY

Los Alamos NATIONAL LABORATORY PO Box 1663 Los Alamos, New Mexico 87545

SHEET M-6001 63 OF 88

CLASSIFICATION | REVIEWER EDWARD ARTIGLIA | DATE 7/27/12

PROJECT ID 100761 | DRAWING NO C-55751 | REV 2

STEPHEN P. STUHRKE NEW MEXICO 20659 PROFESSIONAL ENGINEER

6-29-12

100761-C55751-M00039