15 INSERT BONDING WIRE IN ø.12 HOLE IN ITEM 9 BEFORE SECURING ITEM 55.

16 ITEM 25 SECURED TO ITEM 15 USING ITEM 56 DURING FINAL ASSEMBLY. THIS FLAG NOTE DOES NOT APPLY TO ITEM 7.

17 USED AS ASSEMBLY TOOL.

18 SAMPLE TUBES/TRAPS ITEMS 6, 21, 37, 43, 44, 45, 46, 47, 48, 49, 50 & 67 ARRANGEMENT, QUANTITY AND SORBENT MATERIAL WILL BE DETERMINED PER THE TANK SAMPLING ANALYSIS PLAN (TSAP).

19 USE 2" WIDE WHITE TAPE SCOTCH BRAND #471 OR EQUAL, AS REQUIRED AT FINAL ASSEMBLY, TO SECURE CLEAR ACRYLIC TUBING (ITEM 54) TO SAMPLE HEAD (ITEM 15) AND BULKHEAD TOP COLLAR (ITEM 19) ON SAMPLE HEAD ASSEMBLY (ITEM 2). THIS SAME TAPE WILL BE USED TO SECURE THE CLEAR ACRYLIC TUBING (ITEM 54) TO THE BODY (ITEM 9) AND BULKHEAD TOP COLLAR (ITEM 19) ON SAMPLE HEAD ASSEMBLY (ITEM 4). THIS TAPE WILL ALSO BE USED TO SECURE THE SUMMA LINE (ITEM 27) AND THERMOCOUPLE (ITEM 23) TO BOTH SAMPLE HEAD ASSEMBLIES (ITEM 2 AND 4). FOR ITEM 7, SECURE THE ITEM 68 REDUCER TO ITEM 1 SAMPLE HEAD ASSEMBLY AND SECURE ITME 19 BULKHEAD TOP COLLAR TO ITEM 54 ACRYLIC TUBING USING THIS TAPE.

20 TO BE MARKED BY LAB WITH SERIAL NUMBER AND FLOW INDICATION.

21 THE FIRST CHARACTER OF THE TUBING NUMBER REPRESENTS THE CATALOG NUMBER AND THEREFORE IT WILL VARY.

22 ITEM 66 (SET SCREW) TO BE ALTERED BY THE ADDITION OF A ø.054 HOLE THRU ON THE CENTER LINE.

23 MINIMUM LENGTH AS PRACTICAL. MAXIMUM LENGTH NOT TO EXCEED 40" WITHOUT COGNIZANT ENGINEER CONCURRENCE.

24 FOR SAMPLING FROM A 3/4" FEMALE NPT PORT, USE ITEM 74 CONNECTORS ONLY. FOR SAMPLING FROM A 1" FEMALE NPT PORT, USE ITEMS 74 AND 75. FOR SAMPLING FROM A 3/4" MALE NPT PORT USE ITEMS 74, 76. FOR SAMPLING FROM A 1" MALE NPT PORT USE ITEMS 74 AND 77.

25 OPTIONAL T-SECTION DUCT ARRANGEMENT. ARRANGEMENT TO BE DETERMINED PER THE TANK SAMPLING WORK PACKAGE. STRAIGHT PROBE TIP IS TO BE INSTALLED WITHIN ±1" FROM CROSS DUCT CENTERLINE.

26 BEND TUBE APPROXIMATELY AS SHOWN, MIN RADIUS .4"

27 ITEM 1 SAMPLE ASSY USES ITEM 2 OR ITEM 4, ARRANGEMENT WILL BE DETERMINED PER THE TANK SAMPLING ANALYSIS PLAN (TSAP).

28 ATTACHING SUMMA LINE (ITEM 27) DIRECTLY TO ITEM 72 CONNECTOR IS THE PREFERRED CONFIGURATION FOR ITEM 7. OPTIONAL TO USE 1 EACH OF ITEMS 71 AND 78 TO ATTACH SUMMA LINE AS SHOWN ON SHEET 5.

29 AFTER MACHINING, WASH WITH LIQUID DETERGENT(DISH SOAP) AND RINSE THOROUGHLY WITH POTABLE WATER, TOWEL DRY, THEN SWAB WITH LINT FREE CLOTH DAMPENED WITH HEXANE, REPEAT UNTIL CLOTH REMAINS CLEAN

30 THIS FLAG NOTE APPLIES TO ITEM 7 VENT SAMPLING HEAD ASSY ONLY. ITEM 2 IS TO BE USED WITH ITEM 1. THE OVERALL LENGTH OF THE ITEM 3 "14 TUBE BUNDLE ASSY" IS TO BE 15' ±6". OMIT FROM ITEM 2 ITEMS 23, 25, 26, 56 AND 59. OMIT FROM ITEM 3 ITEMS 29, 30, AND 31.

31 PROBE TIP TO BE INSTALLED WITHIN APPROXIMATELY ±1" FROM DUCT CENTERLINE.

PARTS/MATERIAL LIST

QTY REQD -070	-060	-050	-040	-030	-020	-010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO
AR								TUBING, 5/8 OD X .028-.035 WALL	ANY 300 SERIES SST	5	79
AR							(5239K18)	TEFLON TUBING, 5/8 ID	(MCMASTER-CARR) OR EQUIVALENT	5	80
1							AS-568A-333	O-RING, TEFLON, ENCAPSULATED VITON CORE (ID 2.5, OD 2.875, W .187-NOM)	UNIVERSAL	5	81
											82
											83

PARTS/MATERIAL LIST

	QTY REQD -070	-060	-050	-040	-030	-020	-010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO
					1			NMP-K-F	CONNECTOR, THERMOCOUPLE - FEMALE	OMEGA OR EQUIVALENT	3	31
					1			7432K34	WRAP, 3/4" TO 5" HELICAL BUNDLING CLEAR POLYETHLENE X 50 FT L	MCMASTER CARR OR EQUIV	3	32
					1			7432K24	WRAP, 3/4" TO 5" HELICAL BUNDLING BLACK POLYETHLENE X 50 FT L	MCMASTER CARR OR EQUIV	3	33
					13			E-06833-00	CLAMP, RACHET TUBING (C-FLEX TUBING CLAMP)	COLE-PARMER OR EQUIV	3	34
21					AR		AR	E-06424-15	TUBING, MASTERFLEX L/S PRECISION 3/16 ID X 3/8 OD C-FLEX LAR	COLE-PARMER OR EQUIV	1/3	35
8					AR			1724316	LABELS MARKER, ELECTRICAL LINE WIRE, 3X5 LOOSE-LEAF PCMB-13	OR EQUIVALENT		36
							AR	2-0527	TUBING, 1/4 OD X .020 W	SUPELCO	1	37
				2				702970	FRIT	GELMAN SCIENCES	2	38
				2				61631	GLASS FIBER FILTER	GELMAN SCIENCES	2	39
							AR	1-0184	SORBENT TUBE, CARBOSIEVE SIII	SUPELCO	1	40
							AR	2-0287	SORBENT TUBE, CARBOTRAP	SUPELCO	1	41
							AR	2-0309	SORBENT TUBE, CARBOTRAP C	SUPELCO	1	42
							AR	226-10-04	SORBENT TUBE, SILICA GEL	SKC-WEST	1	43
							AR	226-29	SORBENT TUBE, CARBON BEADS	SKC-WEST	1	44
							AR	226-40	SORBENT TUBE, MOLECULAR SIEVE W/OXIDIZER	SKC-WEST	1	45
							AR	2-0057	SORBENT TRAP, POLYURETHANE FOAM W/PLUG 2-0600-U	SUPELCO	1	46
							AR	226-80	SOx TRAP, ST TREATED CARBON BEADS	SKC-WEST	1	47
							AR	SX0001300	HOUSING, FILTER W/FILTER MATERIAL AP15-047-00	MILLIPORE	1	48
							AR	226-10-04	TRITIUM TRAP, SILICA GEL	SKC-WEST	1	49
							AR	20411	SORBENT RETAINER, GLASS WOOL: SALINE TREATED	SUPELCO	1	50
			1					SS-400-1-6	MALE CONNECTOR, 1/4 TUBE X 3/8 MNPT	SWAGELOK	2	51
			1					SS-400-P	PLUG, 1/4	SWAGELOK	2	52
					1			14-169-17G	TUBE, 1/4" ID X 1/16" W PFA (TEFLON) X LAR (SUMMA LINE)	FISHER SCIENTIFIC OR EQUIVALENT	3	53
				1		1			TUBING, 2 1/2 OD X .032 W LAR	CLEAR ACRYLIC	2	54
				1					SCREW, HEX HD #8-32 UNC-2A X 1/2 L	ANY GRADE SST	2	55
						1			SCREW, FLAT HEAD, MACHINE, #8 -32 UNC-2A X 1/4 L	ANY GRADE SST	2	56
				1		1			BOLT, HEX, 1/4-20 UNC-2A X 2 L	ANY GRADE SST	2	57
				1		1			NUT, WING, 1/4-20 UNC-2B	ANY GRADE SST	2	58
				1		1		P-18-8F-C	LUG, OPEN, #8 -0-12 AWG	PANDUIT OR EQUIVALENT	2	59
			2						ROUND, 1/4 NOM X 5/16 L	ANY GRADE SST	2	60
21							AR	*-06375-05	TUBING, 3/8 OD X 1/4 ID X AR L	COLE-PARMER TEFLON PFA OR EQUIV	1	61
		1						22393	FERRULE, SUPELTEX M-2A	SUPELCO	1	62
		1						22493	FERRULE, SUPELTEX M-4	SUPELCO	1	63
		2						SS-6MO-R-4	REDUCER, 6mm TO 1/4" WITH STAINLESS STEEL BACK FERRULE	SWAGELOK	1	64
		1							SAMPLE TUBE, TUBING, 6mm OD X 4mm ID X 115mm L	ANY GRADE SST	3	65
22		2							SET SCREW, M4 X 6.4mm L	ANY GRADE SST	1	66
18							AR	2-5049 THRU 2-5056	SORPTION TUBE, (PERKIN-ELMER)	SUPELCO	1	67
	1							-016	REDUCER	ANY 300 SERIES SST	5	68
	1							SS-8-ST	1/2 STREET TIE	CAJON	5	69
	2							SS-10-HC-1-8	5/8 HOSE CONNECTOR, MALE NPT	SWAGELOK	5	70
28	1							SS-200-1-8	MALE CONNECTOR, 1/8T TO 1/2 NPT	SWAGELOK	5	71
28	1							SS-400-1-8	MALE CONNECTOR, 1/4T TO 1/2 NPT	SWAGELOK	5	72
	1							SS-1010-7-8	FEMALE CONNECTOR, 5/8T TO 1/2 NPT	SWAGELOK	5	73
24	1							SS-1010-1-12BT	MALE CONNECTOR, 5/8T TO 3/4 NPT, BORED THROUGH	SWAGELOK	5	74
24	1							SS-16-RB-12	REDUCING BUSHING, 1" TO 3/4 NPT	CAJON	5	75
24	1							SS-12-HCG	HEX COUPLING, 3/4	CAJON	5	76
24	1							SS-16-HRCG-12	HEX REDUCING COUPLING 1" TO 3/4 NPT	CAJON	5	77
28	AR								TUBING, 1/8 OD X .028-.035 WALL	ANY 300 SERIES SST	5	78

BLDG. NO.

INDEX NO.

THIS SPACE RESERVED FOR BUILDING AND INDEX NUMBERS

DWG NO H-2-825301 SH 4 OF REV 0

DWG NO	TITLE
DRAWING TRACEABILITY LIST	

REF NUMBER	TITLE
REFERENCES	
NEXT USED ON	AS ALLOCATED

REV LTR	REV NO	DESCRIPTION	REV BY DATE	ENGR	COMPANY
REVISIONS					

	NAME	DATE	COMPANY
DRAWN BY	DM HILGERT	8/02	CONEMAR
ENGINEERING	RL MILLER	8/02	CONEMAR
APPD BY	GW WILSON	8/02	CONEMAR
APPD BY	DD WANNER	8/02	CHG
DESIGN AUTHORITY	GP JANICEK	8/02	CHG

U.S. DEPARTMENT OF ENERGY
Office of River Protection

IN SITU SAMPLE HEAD ASSEMBLY & DETAILS

SIZE	BLDG NO	INDEX NO	DWG NO	REV
F	241G	4600	H-2-825301	0

SCALE SHOWN ECN-657983 SHEET 4 OF

2125

DOE_TB_F.DWG (01-01)