Sta 4 (2)
OCT 04 1994

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT 608889

2. To: (Receiving Organization) Core Sampling	3. From: (Originating Organization) Characterization Equipment	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: Core Sampling Aux. Equipment	6. Cog. Engr.: J.L. Smalley	7. Purchase Order No.: 404870
8. Originator Remarks: ETN-94-0023-F This Acceptance Test Procedure is transmitted for approval. A portion of the procedure was prepared by the Seller and will be performed at the Sellers location. The ATP will show compliance with specification WHC-S-0249 Rev.1.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: 200 General
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 10/4/94

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-WM-ATP-108	N/A	0	Acceptance Test Procedure for a Portable, Self-Contained Nitrogen Supply	Q	1	1	1

16. KEY					
Approval Designator (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment	4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)										(G)	(H)
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog.Eng. J.L. Smalley	<i>J.L. Smalley</i>	10/3/94	R1-17	Alois Kostelnik	<i>Alois Kostelnik</i>	9-28-94	R1-17	1	1
1	1	Cog. Mgr. R.J. Blanchard	<i>R.J. Blanchard</i>	10/3/94	R1-17	OSTI (2)		10-07		3	
1	1	QA J.J. Verderber	<i>J.J. Verderber</i>	9-29-94	S1-57	Central Files		10-04		3	
		Safety N/A									
		Env. N/A									
1	1	Core Sampling Cog. A.P. Mousel	<i>A.P. Mousel</i>	10/3/94	S7-12						

18. AJ Kostelnik <i>AJ Kostelnik</i> Signature of EDT Originator 9-28-94 Date	19. AP Mousel <i>A.P. Mousel</i> Authorized Representative for Receiving Organization 10/3/94 Date	20. RJ Blanchard <i>R.J. Blanchard</i> Significant Manager 10/3/94 Date	21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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MASTER

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RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-ATP-108, REV 0

Document Title: Acceptance Test Procedure for a Portable, Self-Contained Nitrogen Supply

Release Date: October 4, 1994

* * * * *

This document was reviewed following the
procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

* * * * *

WHC Information Release Administration Specialist:

Kara Broz

(Signature)

October 4, 1994

(Date)

SUPPORTING DOCUMENT		1. Total Pages 11
2. Title Acceptance Test Procedure for a Portable, Self-Contained Nitrogen Supply		3. Number WHC-SD-WM-ATP-108
		4. Rev No. 0
5. Key Words ETN-94-0023-F Core Sampling, Nitrogen Trailer, Specification WHC-S-0249, Liquid Nitrogen, Norco, MVE, Minnesota Valley Engineering, Vaporizer, Cryogenic Experts Incorporated, CEXI, Purchase Order 404870, Core Sampling Auxiliary Equipment		6. Author Name: Alois J Kostelnik Signature Organization/Charge Code 7EA40/N457D
7. Abstract <i>Kmb 10/4/94</i> APPROVED FOR PUBLIC RELEASE This Acceptance Test Procedure (ATP) will document compliance with the requirements of WHC-S-0249 Rev.1 and ECN 606112. The equipment being tested is a Portable, Self-Contained Nitrogen Supply. The unit was purchased as a Design and Fabrication procurement activity. The Functional Test was written by the Seller and is contained in Appendix A. The Functional test will be performed by the Seller with representatives of the Westinghouse Hanford Company performing inspection and witnessing the functional test at the Seller's location.		
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9. Impact Level Q		

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1.0 SCOPE and PURPOSE

This acceptance test verifies the requirements specified in WHC-S-0249 Rev. 1 and ECN 606112 for a Portable, Self-Contained Nitrogen Supply are satisfied.

Because of the latest operating requirement changes, modifications which are necessary to comply with the requirements contained in ECN 613531 shall be tested at a later date and the results shall be included in the Acceptance Test Report.

2.0 TEST PERFORMANCE

Norco will complete the following test in the order deemed best by Norco personnel at Norco's facility. Westinghouse Hanford Company, (WHC) personnel shall witness all testing and shall perform the inspection portion of this procedure. All steps shall be completed and any exception noted on the attached exception sheet along with the resolution. Norco shall resolve all exceptions with the concurrence of WHC.

3.0 RECORDS REVIEW

- _____ 3.1 The nitrogen storage tank is be a Portable Liquid Nitrogen Tank, Minnesota Valley Engineering (MVE) Liquid Delivery System, Model HLD-1530N with skid mounted hardware.
- _____ 3.2 The liquid nitrogen tank is DOT approved for transporting liquid nitrogen under normal working pressure on public roads.
- _____ 3.3 The liquid nitrogen tank was designed and built to the American Society of Mechanical Engineers (ASME) Section 8, Division 1, Boiler and Pressure Vessel Code.
- _____ 3.4 The vaporizing system is equipped with a pressure regulator. The pressure regulator controls the pressure of the nitrogen gas exiting the vaporizing system. The pressure regulator has a pressure delivery range from 0 to 120 psig, when the flow rates range from 0 to 60 scfm.
- _____ 3.5 The vaporizing system will operate under maximum flow, when severe ambient conditions occur, for a minimum of 16 hours before refueling or servicing is required.
- _____ 3.6 The fuel used to operate the vaporizing system is propane and a suitably sized tank is supplied and attached to the trailer. Minimum of 16 hours of continuous operation.

4.0 INSPECTION

- 4.1 Record the model and serial numbers of the Nitrogen Storage Tank, Vaporizer, and Trailer.

TANK	VAPORIZER	TRAILER
Model#	Model#	Model#
Serial#	Serial #	Vehicle#

- 4.2 The liquid nitrogen tank and all other pressure vessels have been stamped to indicate conformance with the American Society of Mechanical Engineers (ASME) Section 8, Division 1, Boiler and Pressure Vessel Code.

____ 4.2.1 Nitrogen Tank

____ 4.2.2 Propane Tank

____ 4.2.3 Heat Exchanger/Vaporizer

____ 4.2.4 Other _____

- 4.3 The Nitrogen Tank has sufficient operating controls and instrumentation to insure safe operation and transportation.

____ 4.3.1 Pressure building

____ 4.3.2 Pressure relief

____ 4.3.3 Liquid level indication

____ 4.3.4 Pressure indication

____ 4.3.5 Other _____

- ____ 4.4 The Nitrogen Tank's controls and operations are fully self-contained (requiring no auxiliary power or auxiliary support vehicles.)

- ____ 4.5 The power required to operate the vaporizer is supplied by a propane powered, 4 KW generator. The capability of being either powered from an external source or the propane generator is available through a suitable receptacle/plug arrangement.

- 4.6 The vaporizer has sufficient operating controls and instrumentation to ensure safe operation including but not limited to the following.

____ 4.6.1 Water temperature indication

____ 4.6.2 Nitrogen outlet temperature indication

- _____ 4.6.3 Pressure indication
- _____ 4.6.4 Water flow indication
- _____ 4.6.5 Emergency shutdown
- _____ 4.6.6 Outlet pressure regulator
- _____ 4.6.7 Vent valve
- _____ 4.6.8 Other _____
- _____ 4.7 The vaporizing system's propane fueled water heaters have automatic lighting starters.
- _____ 4.8 A 1 inch inside diameter, 100 foot long, flexible hose is connected to the outlet of the Nitrogen pressure regulator. The flexible hose is rated for pressures of at least 250 psig and temperatures from -40°F to 150°F. The free end of the hose is equipped with a Hansen LL12-H46 socket. The hose is on a manually operated hand crank hose reel which is mounted on the tongue assembly.
- _____ 4.9 Two additional 50 foot sections of 1 inch inside diameter flexible hose are supplied. The 50 foot sections of hose are equipped with a Hansen LL12-K46 plug on one end and a Hansen LL12-H46 socket on the other end. The hose is rated for pressures of at least 250 psig and temperatures from -40°F to 150°F.
- _____ 4.10 The trailer is a flatbed, 36,000 pound rating, with a load capacity of 30,000 pounds, (See nameplate attached.) Trail Max Model TD-30-F.
- _____ 4.11 Grating is provided for the trailer mounted hoses and piping to prevent damage from personnel climbing on the unit for operation and maintenance. The grating is bolted in place so that it may be removed for maintenance.
- _____ 4.12 All major components are bolted to the trailer for ease of removal and maintenance.
- _____ 4.13 There are no suspect fasteners on the trailer, vaporizer or components. Refer to the Suspect Fasteners Headmark List included in the specification, WHC-S-0249.
- 4.14 All components and controls necessary for operation or safety are uniquely identified with a high impact plastic label with 1/8 inch tall characters, Black on a White background.
 - _____ 4.14.1 All valves (automatic, manual, or check)
 - _____ 4.14.2 All pressure indicators

____ 4.14.3 All temperature indicators

____ 4.14.4 All switches and alarms/lights.

____ 4.14.5 Walk through WHC Plant Operating Procedure TO-020-453 Rev. A-2 and verify labeling matches the procedure for operation. See label list contained in Appendix B.

4.15 Trailer Requirements

____ 4.15.1 Mainframe and platform are manufacturer's standard

____ 4.15.2 Crossmembers - 20 inch center maximum

____ 4.15.3 Hitch - Pintle type, adjustable, minimum 2-3/4 inch.

____ 4.15.4 Main Jack - Screw type w/drop foot, 12,000 pound capacity.

____ 4.15.5 Leveling Jacks - Screw type w/drop foot, 12,000 pound capacity (all four corners).

____ 4.15.6 Safety chains with hooks.

____ 4.15.7 2 Axles - 15,000 pound each.

____ 4.15.8 Brakes - 4 wheel air brakes.

____ 4.15.9 Hubs - Oil bath type 10 on 8.75 BC.

____ 4.15.10 Suspension - 3 point slipper spring type.

____ 4.15.11 Wheels - Dual Disc 17.5 x 6.75 10 on 8.75 BC.

____ 4.15.12 8 Tires - 215/75R 17.5 radial load range "H".

____ 4.15.13 Electrical - ICC/DOT approved, sealed system - rubber isolated.

____ 4.15.14 Decking - 3/16 inch minimum diamond plate deck.

____ 4.15.15 Paint - Unit is painted with White enamel.

____ 4.15.16 The bottom of the trailer is undercoated for rust protection.

____ 4.15.17 The equipment is arranged on the trailer for weight distribution and ease of operation.

____ 4.15.18 Verify Flammable Gas placard is on the trailer as required by DOT for the Propane.

5.0 RUN TEST

Norco personnel shall perform this portion of the Acceptance test per their submitted Functional Test Procedure included as Appendix A. WHC personnel shall witness the Functional Test. A minimum of 50 feet of hose shall be connected to the outlet of the flowmeter during testing to simulate WHC operational conditions.

The following data as a minimum shall be recorded to document compliance with the requirements. Recommended to record data on intervals of approximate 5 minutes until relatively steady state conditions are achieved. System stability indicates the equipment will operate continuously at each setting.

- 5.1 Actual pressures of the Nitrogen exiting system with the regulator set at approximately 60, 80, 100 and 120 psig. (Final set point of 120 psig is desired.)
- 5.2 Nitrogen flow rates of 10 scfm, 50 scfm and the maximum achievable at each pressure setting.
- 5.3 Temperature of the Nitrogen at the flowmeter installed for testing purposes for each flow rate.
- 5.4 Vaporizer water temperature.
- 5.5 Ambient Temperature at the start and end of testing.

6.0 ACCEPTANCE TEST COMPLETION

- ____ 6.1 The results of the Run Test indicate compliance with specification WHC-S-0249. The vaporizing system controls the temperature of the gas exiting the system to between 35°F and 100°F after steady state is achieved.
- ____ 6.2 All portions of this test have been completed.

TEST COMPLETED BY:

PRINT NAME	COMPANY	SIGNATURE	DATE

APPENDIX A

WELDING, SAFETY, MEDICAL GASES AND SUPPLIES

102 East Columbia Drive • Kennewick, WA 99336 • (509) 582-6404 • FAX (509) 586-0573

September 22, 1994

Westinghouse Hanford
P.O. Box 1970
Richland, WA 99352

Re: Functional Test Procedures
P.O. # MDW-XV-404870

Mr. Dale Whitworth,

Following will be the procedure for testing the Nitrogen Unit
and Vaporizer at our Boise location.

- 1) Fill unit with all required consumables, nitrogen, propane
and fuel for generator.
- 2) Turn propane system on and start power generator.
- 3) Start vaporizer allowing water to circulate.
- 4) Turn pressure building assembly on to build pressure in
the nitrogen tank, and start liquid nitrogen flow.
- 5) Adjust pressure regulator on vaporizer from 0 - 120 PSIG.
Check flow rates from 0 - 60 SCFM.
- 6) Check temperature of gas exiting the system and assure the
range is between 35°F to 100°F.

Thank you,

Greg Stanley
Area Mgr.

APPENDIX B

LABELS ON NITROGEN TRAILER HO-74-5170. ADDITIONAL UNITS TO HAVE IDENTICAL LABELING TO EXTENT POSSIBLE. LABELING SHOULD BE ON 1" x 2" OR 1" x 3" PLASTIC WITH BLACK LETTERS ON A WHITE BACKGROUND. MINIMUM LETTER SIZE 1/8".

V-6 NITROGEN SUPPLY	RV-4 SUPPLY LINE RELIEF	V-5 PRESSURE BUILDING
V-1 TOP FILL	V-2 BOTTOM FILL	V-3 VENT TANK
V-4 LIQUID DELIVERY	V-12 ROAD RELIEF	V-8 FULL TRYCOCK
R-1 PRESSURE BUILDING REGULATOR	V-13 ANNULUS EVACUATION	V-7 DELIVERY HOSE DRAIN
SOV-1 NITROGEN SUPPLY SOLENOID	R-2 NITROGEN SUPPLY REGULATOR	PG-2 NITROGEN SUPPLY PRESSURE
V-16 VENT NITROGEN	V-14 TRUCK NITROGEN	V-15 EXHAUSTER NITROGEN
R-3 INSTRUMENT AIR REGULATOR	V-17 TANK LIQUID PROPANE	V-18 EXCHANGER LIQUID PROPANE
V-21 LEFT HEATER PROPANE	V-20 EXCHANGER PROPANE GAS	V-19 TANK PROPANE GAS
V-22 RIGHT HEATER PROPANE	R-4 HEATER PROPANE REGULATOR	TC-1 NITROGEN TEMP CONTROLLER
RV-6 PROPANE RELIEF	FS-1 WATER FLOW SENSOR	TS-1 WATER TEMP SENSOR
V-23 WATER VENT	V-24 WATER VENT	V-25 WATER VENT
FR-1 WATER FLOW REGULATOR	RV-5 DELIVERY HOSE RELIEF	RV-7 WATER EXCHANGER RELIEF
WATER PUMP OFF ON	V-27 ANTIFREEZE DRAIN	V-26 ANTIFREEZE FILL
V-28 GENERATOR PROPANE GAS		

NITROGEN GAS TEMP LOW CUTOFF (°F)	WATER TEMP LOW CUTOFF (°F)	EMERGENCY SHUTDOWN
LEFT HEATER	RIGHT HEATER	CONTROL PANEL
POWER ON	WATER PUMP ON	FAULT

[illegible]

PRINT NAME	COMPANY	SIGNATURE	DATE

*** Make additional copies as required.**