UPDATE ON GISP2
DRILLING AND OPERATIONS

Polar Ice Coring Office
University of Alaska Fairbanks
Fairbanks, Alaska 99775-1710

PICO OR-90-1

December 1990

* PICO is operated by the University of Alaska Fairbanks under contract to the National Science Foundation, Division of Polar Programs.
UPDATE ON GISP2 DRILLING AND OPERATIONS

DRILLING

GENERAL

Item 1: Rust forming on drill component.

Status: Drill components will be protected with a rust preventative which is already on site. After the rust preventative has been applied the components will be placed in polyethylene tubing for shipment.

Item 2: Potential contaminants from the drill in the drill fluid.

Status: See attached list of potential contaminants. Samples of the butyl acetate used in the motor test are available. What quantity is required?

DRILL TEST

Item 1: Drill test at CRREL.

Status: The drill test at CRREL has been cancelled. The drill components will be tested at UAF (see attached schedule).

ANTI-TORQUES

Item 1: New anti-torque design.

Status: 2 designs are completed and will be fabricated by Kozycki; see drawings.

CUTTERS

Item 1: Improve cutter performance.

Status: a) Design of the pre-cutter head is complete, Kozycki and PICO working on drawings, Kozycki will fabricate.

b) Cutters for "old" head have been ordered.

c) Modifications to "old" heads have been completed.

BOREHOLE CAMERA AND FISHING TOOLS

Item 1: Develop a system to see what may be down the hole and retrieve it if necessary.

Status: We have two possible vendors for the camera, it is not yet on order. Kozycki to fabricate fishing tools. See examples.
PUMP SECTION

Item 1: Butyl acetate eats EPDM rubber stators.
Status: 2 Teflon stators are on order and we have 2 EPDM stators as backups.

CHIP REMOVAL AND DRILL HANDLING

Item 1: Improve chip removal from screen sections.
Status: A new coupling has been designed and enough for one drill string have been fabricated. After testing at UAF, the remaining couplings will be fabricated.

Variable frequency, variable amplitude vibrators have been located and will be purchased. They will probably not be available for the drill test in January but will be tested before the field season.

PADDING, "SHOCK ABSORBING" AND CORE HANDLING

Item 1: Improve the tilt table and the core handling system.
Status: Concept drawings for the new tilt table are complete and the fabrication drawings will be finished by Jan. 1.

WINCH

Status: The winch is scheduled for delivery April 15.

BOREHOLE DEPTH MEASUREMENT AND INSTRUMENTATION

Item 1: We need accurate depth measurements.
Status: The drill cable will be used to measure the hole depth on the way up. We need to discuss with the SMO whether another type of measuring device is necessary.

OPERATIONS

GENERAL

Item 1: Tracking purchases from requisition to delivery.
Status: A tracking system is now in place. See tracking system computer printout.
Item 2: Research the possibilities of an air-drop.

Status: A unit out of Dover handles air-drops. Cost effectiveness is still being investigated.

Item 3: Confusion on medical forms.

Status: The medical forms have been finished and are in the process of being printed. See attached forms for examples.

Item 4: Lack of an up-to-date site map.

Status: Site map is now available. Several copies will be given to the SMO.

**SCIENCE TRENCH**

Item 1: The roof needs to be stabilized.

Status: Malcom Miller from CRREL has been contacted. After Wayne Tobiasson returns from Antarctica PICO and SMO will continue discussions.

Item 2: We need a more efficient method of removing snow blocks from the science trench to lower the floor.

Status: We are still investigating options.

Item 3: Another HNU butyl acetate detector is required.

Status: Awaiting approval of specifications. Tom Gosink is calibrating the existing HNU unit.

Item 4: Additional space is required for "science workspace."

Status: We have investigated options for a new structure. A decision must be made on size and type.

**FREEZER AND PRE-CPL CORE STORAGE**

Item 1: The freezer should be enlarged to accommodate core.

Status: We have received quotes. P.O. is being processed.

Item 2: Additional core storage space is required.

Status: Kevin Curtis is working on design. We need to know the length of the trench and location. The width is 12 ft. with a 3 ft. walkway.

Item 3: Air re-circulation duct work was not installed last year.

Status: Duct work will be installed this year.
LAB VAN

Item 1: Constant temperature is required.

Status: So far we haven't located a variable output, constant operation heater. Jay K. has developed a possible solution which will be discussed.

Item 2: Improved water distribution and an additional wash station is required.

Status: A new rinse station is planned. Water distribution requirements must be discussed with SMO.

VEHICLES AND FACILITIES

Item 1: Additional snow machines are required.

Status: PICO is receiving bids on 4 new Cheyenne machines.

Item 2: A new Cat 931 is required.

Status: A quote from Caterpillar has been received and a P.O. is being processed. The 931 is scheduled for delivery by April 1, 1991.

Item 3: We need new guidelines for use of the Telex.

Status: New guidelines have not been established.

Item 4: GISP2 BX to be established.

Status: No action has been taken. Would the SMO provide a list of what they would like included?

Item 5: More radios are required.

Status: 5 new base stations, 2 new hand-holds and 5 intercom units have been ordered. An ICOM 700 has also been ordered for ATM.

Item 6: New plumbing in the bath house must be installed.

Status: Materials list has been completed and will be ordered.

Item 7: Lack of office supplies.

Status: Office supplies will be coordinated with the SMO and purchased by PICO.
ICE TRANSPORT TO CONUS

Item 1: New core storage containers are required for shipment of core to CONUS.

Status: Two options are being investigated:

a) Insulated boxes which could be knocked-down and returned to the field inexpensively.

b) Portable freezer units which fit on Air Force pallets.

PICO STAFF

Item 1: Lack of camp personnel to open camp.

Status: See attached sheet for list of planned camp personnel and phase-up plan.

Item 2: Defining the requirements of a camp medic.

Status: See attached job description for medic.
LIST OF
POTENTIAL
CONTAMINANTS
MSDS NUMBER: 258

PRODUCT: EPO DYNATECH

MFG NAME: COMMERCIAL CHEMICAL COMPANY

CITY: CINCINNATI

STATE: OH

ADDRESS: 1021 SUMMER ST.

ZIP: 45204

EMERGENCY PHONE: 513-921-8622

CHEMICAL: NONE ON MSDS

TRADE NAME: EPO DYNATECH

CHEMICAL FAMILY: NONE LISTED ON MSDS

FORMULA: NONE LISTED ON MSDS

MIXTURE: NO HAZARDOUS INGREDIENTS PER CAN.

1910.1000

N. I. F.

VAPOR PRESSURE:

VOLATILE %:

EVAPORATION:

APPEARANCE:

GREY MASTIC ODOR. AMMONIA TYPE.

SPECIFIC GRAVITY:

FLASH POINT:

200°F

FLAMMABLE LIMITS:

N. I. F.

FLAME LEL:

N. I. F.

FLAME UEL:

N. I. F.

EXTINGUISH:

DRY CHEMICAL, CO2 FOAM-FOG

FIRE PROCEEDURE:

FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF SMOKE VAPOUR.

EXPLOSION HAZARD:

NONE KNOWN

THRESHOLD:

N. I. F.

EXPOSURE:

ACUTE: DERMATITIS, CHRONIC: PULMONARY IRRITANT. HIGHLY IRRITATING TO EYES. DEFATTING TO SKIN. RASH. SLIGHT SKIN IRRITANT. MAY BE SKIN SENSITIZER.

INHALATION: REMOVE TO FRESH AIR.

EYES: FLUSH WITH WATER. MEDICAL ATTENTION AS REQUIRED.

SKIN: WASH WITH SOAP AND WATER.

INGESTION: CONTACT PHYSICIAN.

FIRST AID:

STABILITY:

SMOKE, TOXIC VAPOURS, FUMES.

DECOMPOSITION:

WILL NOT OCCUR.

POLYMERIZATION:

LEAK STEPS:

PICK UP AND DISCARD APPROPRIATELY.

KEEP AWAY FROM HEAT OR OPEN FLAME.

DISPOSAL:

BURN IN ADEQUATE INCINERATOR OR APPROVED LANDFILL.

RESPIRATORY: N. I. F.

VENTILATION:

LOCAL EXHAUST:

RECOMMENDED

OTHER EXHAUST:

RECOMMENDED

GLOVES:

RECOMMENDED

EYE PROTECTION:

N. I. F.

OTHER PROTECTION:

UNCONTROLLED EXOTHERMIC REACTIONS.
OTHER PRECAUTIONS: CLEAN HYGIENE HABITS. CLEAN EYES DAILY.

AVOID CONDITIONS: STRONG OXIDIZING AGENTS. AVOID UNDER UNCONTROLLED CONDITIONS.

AVOID MATERIAL: N/1

SPECIAL EXHAUST: N/1
MECHANICAL EXHAUST: N/1
BOILING POINT: NONE
DATE ADDED: 09 FEB 87
VAPOR DENSITY: N/A
SOLUBILITY: INSOLUBLE

EPO DYNAN

FIRE HAZARD

HEALTH HAZ

REACTIVITY

PERSONAL PROTECTIVE EQUIMENT

SAFETY CLASSES

Impermeable Cloth

TARGET ORGANS

NONE

Indicated
Materials List - TT-293X Motor

1. Armature:
   - Shaft: C1144 Stressproof Steel
   - Laminations: AISI Electrical Sheet Steel
   - Slot insulation: Dupont 2-2-2 Nomex-Mylar-Nomex
   - Winding Wire: Phelps Dodge HAPTZ or Essex GP-2000 200°C Wire
   - Commutator: Copper Bar, Sub-Surface Mica and Steel Hub
   - Solder: Multi-Core, 95A, 180°C
   - Winding Wedges: Glass-Filled Polyester Rod
   - Varnish: Schnectady Isonel 31 Polyester

2. Stator
   - Laminations: Cold Rolled Steel
   - Cast Aluminum Housing:
     - A413.1 Alloy Ingot
     - 150.1 Pure Aluminum Ingot
   - Magnets: NdFeB Material
   - Magnet Adhesive: Loctite #325 Adhesive and #707 Activator

3. Endbell: Cast Aluminum, M 1000 Alloy
   - Bearing Liner: Gray Cast Iron
   - Brush Holders, Morganite, Inc.
     - Brass Insert
     - GE Valox 420 Insulator
   - Lead/Hookup Wires: Stranded Conductors
     - Teflon Type EE 200°C Insulation
   - Shrink Tubing: Polyolefin

4. Bearings: Sealed ABEC 1 Ball Bearings
   - Chevron SRI #2 Lube.

5. Motor Brushes
   - Helwig Carbon Co. Grade E-27
     - Milwaukee, WI
     - Telephone: 414-453-9389
   - or Morganite, Inc. Grade E-251
     - Dunn, NC
     - Telephone: 919-892-8081

6. Other Metals
   - Zinc Plated Steel Screws and Bolts
   - Zinc Plated Steel Washers
   - Spring Steel
   - Zinc Plated Terminals
**INDUSTRIAL HYGIENE, TOXICOLOGY, AND MATERIAL SAFETY DATA SHEET**

NOTE: NO REPRESENTATION IS MADE AS TO THE ACCURACY OF THE INFORMATION HEREIN. SEE PAGE 7 FOR CONDITIONS UNDER WHICH DATA ARE FURNISHED.

<table>
<thead>
<tr>
<th>Trade Name and Synonyms</th>
<th>00600 TRANSFORMER OIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer's Name</td>
<td>Texaco</td>
</tr>
<tr>
<td>Emergency Telephone No.</td>
<td>(914) 831-3400</td>
</tr>
<tr>
<td>Address</td>
<td>P.O. Box 509 Beacon, NY 12508</td>
</tr>
<tr>
<td>Chemical Name and/or Family or Description</td>
<td>Transformer Oils</td>
</tr>
<tr>
<td>THIS PRODUCT IS CLASSIFIED AS:</td>
<td>X NOT CARCINOGENIC</td>
</tr>
<tr>
<td>WARNING STATEMENT:</td>
<td>CAUTION! LOW VISCOSITY PETROLEUM MIXTURE CAN CAUSE LUNG INJURY IF INGESTED AND ASPIRATED</td>
</tr>
</tbody>
</table>

### OCCUPATIONAL CONTROL PROCEDURES

**Protective Equipment (Type):** Chemical type goggles or face shield optional.

**Eyes:** Exposed employees should exercise reasonable personal cleanliness; this includes cleansing exposed skin areas several times daily with soap and water, and laundering or dry cleaning soiled work clothing at least weekly.

**Skin:** If vapor, mist or dust is generated in excess of permissible concentrations (see pg.4) use respirator approved by MSHA or NIOSH.

**Inhalation:** Adequate to meet component permissible concentrations.

**Permissible Concentrations:**

**Air:** None established for product. 5 mg/m3 for mineral oil mist averaged over an 8 hour daily exposure (OSHA PEL. ACGIH TLV-TWA).

### EMERGENCY AND FIRST AID PROCEDURES

**First Aid:**

**Eyes:** As with most foreign materials, should eye contact occur, flush eyes with plenty of water.

**Skin:** Wash exposed areas with soap and water.

**Ingestion:** Do NOT induce vomiting. Aspiration of the fluid can cause serious lung injury, i.e. chemical pneumonitis. CALL A DOCTOR IMMEDIATELY.

**Inhalation:** If irritation or drowsiness occurs, remove to fresh air.

**Other Instructions:** None.
PHYSIOLOGICAL EFFECTS:

Effects of Exposure

Acute:

Eyes: Believed to be minimally irritating.

Skin: Believed to be minimally irritating.

Respiratory System: Vapors or mist in excess of permissible concentrations (pp4) may cause irritation (nose/throat), headache, nausea, and drowsiness.

Chronic: N.D.

Other: –

Sensitization Properties:

<table>
<thead>
<tr>
<th>Skin</th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Yes</td>
<td>No</td>
<td>Unknown</td>
<td>X</td>
</tr>
</tbody>
</table>

Median Lethal Dose (LD₅₀, LC₅₀, %Species)

Oral Believed to be >5 g/kg (rat); practically non-toxic

Inhalation N.D.

Dermal Believed to be >10 g/kg (rabbit); practically non-toxic

Other N.D.

Irritation Index, Estimation of Irritation (%Species)

Skin Believed to be 0-0.5/8.0; no appreciable effect

Eyes Believed to be 0-15/110; no appreciable effect

Symptoms of Exposure: None expected other than possible minimal irritation.

FIRE PROTECTION INFORMATION

Ignition Temp. °F N.D.

Flash Point °F (Method) 295°F (COC)

Flammable Limits (%): Lower N.D. Upper N.D.

Products Emitted When Subjected to Heat or Combustion:
Carbon monoxide, carbon dioxide, aldehydes and ketones, combustion products of nitrogen and sulfur.

Recommended Fire Extinguishing Agents And Special Procedures:
According to the National Fire Protection Association Guide, use water spray, dry chemical, foam, or carbon dioxide.
Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop the leak.

Unusual or Explosive Hazards: None.
Waste Disposal Method:
Under RCRA, it is the responsibility of the user of products to
determine, at the time of disposal, whether product meets RCRA
criteria for hazardous waste. This is because product uses,
transformations, mixture, processes, etc. may render the result-
ing material hazardous. (See Remarks for Waste Classification.)

Procedures in Case of Breakage or Leakage: (Transportation Spills Call CHEMTREC (800) 424-9300)
Contain spill if possible. Wipe up or absorb on suitable material
and shovel up.

Remarks:
Waste Classification: Product has been evaluated for RCRA charac-
teristics and does not meet criteria of a hazardous waste if
discarded in its purchased form.

PRECAUTIONS

CAUTION! LOW VISCOSITY PETROLEUM MIXTURE
CAN CAUSE LUNG INJURY IF INGESTED
AND ASPIRATED

Requirements for Transportation, Handling and Storage:
Minimum feasible handling temperatures should be maintained. Periods of
exposure to high temperatures should be minimized. Water contamination
should be avoided.

DOT Proper Shipping Name: N.A.
DOT Hazard Class (if applicable): N.A.

CHEMICAL AND PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°F)</td>
<td>N.D.</td>
</tr>
<tr>
<td>Vapor Pressure (mmHg)</td>
<td>N.D.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.889 (H₂O = 1)</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>N.D.</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Clear and bright liquid</td>
</tr>
<tr>
<td>pH of undiluted product</td>
<td>N.A.</td>
</tr>
<tr>
<td>Solubility</td>
<td>N.D.</td>
</tr>
<tr>
<td>Percent Volatile by Volume</td>
<td>N.D.</td>
</tr>
<tr>
<td>Evaporation</td>
<td>N.D. (I) = 1</td>
</tr>
<tr>
<td>Viscosity</td>
<td>12.0 cSt @40°C</td>
</tr>
</tbody>
</table>

Hazardous Polymerizations: X Occur

The Material Reacts Violently With: (If others is checked below, see additional comments on page 6 for further details)
Air          Water          Heat          Strong Oxidizers          Others          None of These

N.D. = Not Determined      N.A. = Not Applicable
< = Less Than             > = Greater Than
<table>
<thead>
<tr>
<th>Chemical/Common Name</th>
<th>CAS No.</th>
<th>Exposure Limit</th>
<th>Range in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrotreated light naphthenic petroleum distillate</td>
<td>64742536</td>
<td>5mg/m³ ACGIH (MIST)</td>
<td>95.00 - 99.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5mg/m³ OSHA (MIST)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10mg/m³ STEL (MIST)</td>
<td></td>
</tr>
</tbody>
</table>

*Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists.

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### SARA TITLE III

1. **Title III Section 302/304 Extremely Hazardous Substance Component**
   - CAS No.  %  RQ (Lbs)  TPQ (Lbs)
   - NONE

2. **CERCLA Section 102(a) Hazardous Substance Component**
   - CAS No.  %  RQ (Lbs)
   - NONE

3. **Title III Section 311 Hazard Categorization**
   - Acute  Chronic  Fire  Pressure  Reactive  Not Applicable

4. **Title III Section 313 Toxic Chemicals Component**
   - CAS No.  %
   - NONE
**PRODUCT: SHIPPING LABEL**

**00600 TRANSFORMER OIL**

**CAUTION!** LOW VISCOSITY PETROLEUM MIXTURE CAN CAUSE LUNG INJURY IF INGESTED AND ASPIRATED

If swallowed, DO NOT induce vomiting.
Call a doctor immediately.

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<th>CAS No.</th>
<th>Range in %</th>
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<td>64742536</td>
<td>95.00 - 99.99</td>
</tr>
</tbody>
</table>

*Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists. Not classified as a hazardous material by DOT definition.*

HMIS

<table>
<thead>
<tr>
<th>Health</th>
<th>Reactivity</th>
<th>Flammability</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

**CAUTION:** Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

**HEALTH EMERGENCY TELEPHONE:** (914) 831-3400

**Texaco**
2000 Westchester Avenue
White Plains, New York 10605

For Additional Technical Information Concerning:

- Fuels: (914) 838-7336
- Lubricants/Antifreezes: (914) 838-7509
- Chemicals: (512) 459-6543

**Transportation Spills:**
CHEMTREC (800) 424-9300
**TEXACO**

**INDUSTRIAL HYGIENE, TOXICOLOGY, AND MATERIAL SAFETY DATA SHEET**

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<th>Manufacturer's Name</th>
<th>Emergency Telephone No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01537 AIRCRAFT HYDRAULIC OIL 15</td>
<td>Texaco</td>
<td>(914) 831-3400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>Chemical Name and/or Family or Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.O. Box 509 Beacon, NY 12508</td>
<td>Hydraulic Oils</td>
</tr>
</tbody>
</table>

**THIS PRODUCT IS CLASSIFIED AS:**

- CARCINOGENIC BY OSHA, IARC, OR NTP [X]
- NOT CARCINOGENIC

**WARNING STATEMENT:**

**CAUTION!** COMBUSTIBLE
LOW VISCOSITY PETROLEUM MIXTURE
CAN CAUSE LUNG INJURY IF INGESTED
AND ASPIRATED

**OCCUPATIONAL CONTROL PROCEDURES**

**Protective Equipment (Type)**

**Eyes:** Chemical type goggles or face shield optional.

**Skin:** Protective clothing such as uniforms, coveralls or lab coats should be worn. Launder or dry clean when soiled. Destroy contaminated shoes. (See additional comments, p.6) Gloves resistant to chemicals and petroleum distillates required.

**Inhalation:** If vapor, mist or dust is generated in excess of permissible concentrations (see pg.4) use respirator approved by MSHA or NIOSH.

**Ventilation:** Adequate to meet component permissible concentrations.

**Permissible Concentrations:**

**Air:** None established for product; refer to page 4 for component permissible concentrations.

**EMERGENCY AND FIRST AID PROCEDURES**

**First Aid**

**Eyes:** As with most foreign materials, should eye contact occur, flush eyes with plenty of water.

**Skin:** Wash exposed areas with soap and water.

**Ingestion:** Do NOT induce vomiting. Aspiration may cause chemical pneumonia.

**Inhalation:** If irritation or drowsiness occurs, remove to fresh air.

**Other Instructions:** None.

N.D. - Not Determined  N.A. - Not Applicable  
< - Less Than  > - Greater Than
PHYSIOLOGICAL EFFECTS:

Effects of Exposure

Acute:

Eyes: Believed to be minimally irritating.

Skin: Believed to be minimally irritating. May cause dermatitis on prolonged or repeated contact.

Respiratory System: Vapors or mist in excess of permissible concentrations (pg4) may cause irritation (nose/throat), headache, nausea, and drowsiness.

Chronic: N.D.

Other: 

Sensitization Properties:

<table>
<thead>
<tr>
<th>Skin</th>
<th>Yes</th>
<th>No</th>
<th>Unknown X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Yes</td>
<td>No</td>
<td>Unknown X</td>
</tr>
</tbody>
</table>

Median Lethal Dose (LD50, LC50) (Species)

Oral Believed to be > 5 g/kg (rat); practically non-toxic

Inhalation N.D.

Dermal Believed to be > 3 g/kg (rabbit); practically non-toxic

Other N.D.

Irritation Index, Estimation of Irritation (Species)

Skin Believed to be < 0.5/8.0 (rabbit); no appreciable effect

Eyes Believed to be < 15/110 (rabbit); no appreciable effect

Symptoms of Exposure None expected other than possible minimal irritation

FIRE PROTECTION INFORMATION

Ignition Temp. °F N.D. Flash Point °F (Method) 180°F PMCC

Flammable Limits (%) Lower N.D. Upper N.D.

Products Evolved When Subjected to Heat or Combustion:
Carbon monoxide, carbon dioxide, aldehydes and ketones, combustion products of phosphorus.

Recommended Fire Extinguishing Agents And Special Procedures:
According to the National Fire Protection Association Guide, use water sprays, dry chemical, foam, or carbon dioxide. Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop the leak.

Unusual or Explosive Hazards:
None.

N.D. = Not Determined  N.A. = Not Applicable
< = Less Than  > = Greater Than
Waste Disposal Method:
Under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixture, processes, etc. may render the resulting material hazardous. (See Remarks for Waste Classification.)

Procedures in Case of Breakage or Leakage: (Transportation Spills Call CHEMTREC (800) 424-9300)
Contain spill if possible. Wipe up or absorb on suitable material and shovel up.

Remarks:
Waste Classification: Product has been evaluated for RCRA characteristics and does not meet criteria of a hazardous waste if discarded in its purchased form.

PRECAUTIONS

CAUTION: COMBUSTIBLE
LOW VISCOSITY PETROLEUM MIXTURE
CAN CAUSE LUNG INJURY IF INGESTED
AND ASPIRATED
Keep away from heat and flame.

Requirements for Transportation, Handling and Storage:
Minimum feasible handling temperatures should be maintained. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

DOT Proper Shipping Name: Combustible liquid, n.o.s.
DOT Hazard Class (if applicable): Combustible liquid NA1993

CHEMICAL AND PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (PF)</td>
<td>&gt;400</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N.D.</td>
</tr>
<tr>
<td>(mmHg)</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.8729</td>
</tr>
<tr>
<td>(H₂O=1)</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N.D.</td>
</tr>
<tr>
<td>(Air=1)</td>
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<tr>
<td>Appearance and Odor</td>
<td>Red liquid</td>
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<tr>
<td>pH of undiluted product</td>
<td>N.A.</td>
</tr>
<tr>
<td>Solubility</td>
<td>N.D.</td>
</tr>
<tr>
<td>Percent Volatilie by Volume</td>
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<tr>
<td>Evaporation</td>
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<tr>
<td>Viscosity</td>
<td>13.2 cSt @ 40°C</td>
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<tr>
<td>Other</td>
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Hazardous Polymerizations: Occur X Do not occur

The Material Reacts Violently With: (If others is checked below, see additional comments on page 6 for further details)
Air   Water   Heat   Strong Oxidizers   Others   None of These

N.D. - Not Determined  N.A. - Not Applicable
### COMPOSITION

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<th>Chemical/Common Name</th>
<th>CAS No.</th>
<th>Exposure Limit</th>
<th>Range in %</th>
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<tbody>
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<td>2,6-di-tert-butyl-4-methylphenol</td>
<td>128370</td>
<td>10mg/m3 TWA ACGIH</td>
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<tr>
<td>Solvent refined hydrotreated middle distillate</td>
<td>64742467</td>
<td>5mg/m3 ACGIH (MIST)</td>
<td>80.00 - 94.99</td>
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<tr>
<td>Methacrylic acid, copolymer of &quot;methyl&quot; and &quot;lauryl&quot; esters</td>
<td>30795643</td>
<td>None Established</td>
<td>4.00 - 10.99</td>
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</tbody>
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*Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists.

### SARA TITLE III

#### I. Title III Section 302/304 Extremely Hazardous Substance

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<th>RQ (Lbs)</th>
<th>TPQ (Lbs)</th>
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#### II. CERCLA Section 102(a) Hazardous Substance

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<td>Methyl methacrylate</td>
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#### III. Title III Section 311 Hazard Categorization

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<th>Pressure</th>
<th>Reactive</th>
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#### IV. Title III Section 313 Toxic Chemicals

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PRODUCT SHIPPING LABEL

01537 AIRCRAFT HYDRAULIC OIL

CAUTION! COMBUSTIBLE
LOW VISCOSITY PETROLEUM MIXTURE
CAN CAUSE LUNG INJURY IF INGESTED
AND ASPIRATED
Keep away from heat and flame.

If swallowed, DO NOT induce vomiting.
Call a doctor immediately.
In case of fire use water spray, foam, dry chemical or CO2.

Chemical/Common Name   CAS No.   Range in %
2,6-di-tert-buty1-4-methylphenol   128370   1.00 - 3.99
Solvent refined hydrotreated middle distillate   64742467   80.00 - 94.99

Methacrylic acid, copolymer of "methyl" and "lauryl" esters   30795643   4.00 - 10.99

-Hazardous according to OSHA (1910.1200) or one or more state Right-To-Know lists.

HMIS
Health : 0   Reactivity : 0
Flammability : 2   Special : -

DOT Proper Shipping Name: Combustible liquid, n.o.s.
DOT Hazardous Class : Combustible liquid, NA1993

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

HEALTH EMERGENCY TELEPHONE: (914) 831-3400

Texaco
2000 Westchester Avenue
White Plains, New York 10605

For Additional Technical Information Concerning:
Fuels (914) 838-7336
Lubricants/Antifreezes (914) 838-7509
Chemicals (512) 459-6543

Transportation Spills:
CHEMTREC (800) 424-9300
CRREL SCHEDULE
DRILLING

CRREL drill component test. See attachment.

Problems involving rust forming on the drill will be addressed by using a Chevron rust preventative. 10 gallons of this preventative are at the GISP2 site and will be applied after each drill component is dried thoroughly. The components will then be placed in polyethylene lay flat tubing to prevent moisture from condensing on the drill components during shipment to CONUS.

A list of potential contaminants is assembled and will be distributed. See attachment.

Butyl acetate samples from various engineering tests will be made available to the SMO for analysis. What size samples are needed and how many are required?

Anti-torque designs. See attachment.

Cutters. See attachment

Borehole camera and fishing tools. See attachment.

Pump section. Teflon stators have been ordered.

Vibrators. Variable frequency variable amplitude vibrators have been located and will be purchased. They will probably not be available for the CRREL test but will be tested before the field season.

Core handling. Mark is preparing drawings and concept paper.

Drill cable will be used for measuring depth of hole. A 100 meter tape measure will also be used if a butyl proof version can be found.

HNU. Tom Gosink

Butyl test schedule is being developed.

Mark is investigating insulated shipping containers for core transport.
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TIME LINE Gantt Chart Report, Strip 1

The document contains a Gantt chart with task details and project milestones. The chart includes tasks such as "Tilt Table," "General Update," "SHOP," "Purchases and Setup," "Inventory," "Identify Drill Parts-Salvage," "Pallet Racks," "U. Park Storage," and "Forklift." The chart also indicates dates and status of tasks, such as "29-Nov-90" and "1-Feb-91," with symbols for progress and milestones.
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<th>Durtn (Days)</th>
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<th>End Date</th>
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<th>Dec 91</th>
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<td>Chip Path - Emptying</td>
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<td>Vibrator</td>
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<td>1-Dec-90</td>
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<td>15-Feb-91</td>
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</table>

---

**** Detail Task  ##### Summary Task  M Milestone
XXXX (Started)  === (Started)  >>> Conflict
XXX-- (Slack)  ###-- (Slack)  .XXX Resource delay
-------------------------- Scale: 3 days per character--------------------------

TIME LINE Gantt Chart Report, Strip 1
ANTI-TORQUE DESIGNS
1/32" HOLE, 2 PCS. EA. END CENTERED IN FACE OF MAT X

MIN. BEND RAD.

1" TIP

S C R I P T

M A T X D I M:

.125" + .005" = .125" - THK.

.015" + .005" = .020" - WISE

11/13/80

W. H.
RETRIEVAL TOOL SAMPLES
RETRIEVAL TOOLS

A number of retrieval tools are being examined. Retrieval magnets with 155 pounds of force have been ordered. Also a retrieval magnet attachment will be made for an outer core barrel utilizing the rare earth magnets that were salvaged from the failed DC drill motor. This will allow us to retrieve any ferrous metal objects that may find themselves down hole.

For dealing with any non-ferrous metal objects that may be present, we will have two options. One will be a spoon auger that will replace the core barrel assembly. It will be lowered to the bottom of the borehole and then rotated to scoop up debris off the bottom. This would also be effective for removing non-metallic debris.

Another tool for removing debris from the bottom will incorporate a device similar to a split barrel sampler used in soil sampling tools. This would be a tube with spring loaded fingers that would be dropped to the bottom of the hole and would raised an inch or so. The pump would then be turned on and the debris sucked up into the tube where the fingers would prevent the debris from falling out the bottom when the pump is turned off.

A bore hole television camera is being designed to enable a look at the hole bottom to determine which type of retrieval tool is necessary. It will be designed so that it will utilize the drill cable to transmit a video image back to the surface. The signal will be digitized at the camera and sent to the surface where it can be displayed on a computer display and saved. This will also offer a unique opportunity to examine the borehole walls or other areas of scientific interest.
### Split Barrel Sampler

All-purpose sampler used for moisture determination and visual classification. Split barrel permits removal of sample as it is taken from the ground. Generally driven by a 140 lb. hammer falling 30 inches. Blows required to penetrate each foot is often recorded as relative density of material. Used with flap valve or basket trap in non-cohesive soils. Furnished with spacer ring. Order sample retainers separately.

#### Complete Sampler

<table>
<thead>
<tr>
<th>Sampler O.D. (50.8 mm)</th>
<th>Sampler I.D.</th>
<th>Shoe I.D.</th>
<th>Length Barrel</th>
<th>Rod Conn.</th>
<th>Shoe Type</th>
<th>Weight</th>
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<tbody>
<tr>
<td>2&quot; (50.8 mm)</td>
<td>1½&quot; (38.1 mm)</td>
<td>1½&quot; (34.9 mm)</td>
<td>18&quot; (457.2 mm)</td>
<td>AW</td>
<td>Terzaghi (Blunt)</td>
<td>67000-06-10</td>
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<td></td>
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<td></td>
<td></td>
<td>AWML</td>
<td>ASTM (Sharp)</td>
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<td>NW</td>
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<tr>
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<td>2¼&quot; (60.3 mm)</td>
<td>18&quot; (457.2 mm)</td>
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#### Parts

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<th>2¼&quot; O.D. (63.5 mm)</th>
<th>3&quot; O.D. (76.2 mm)</th>
<th>3½&quot; O.D. (88.9 mm)</th>
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<tbody>
<tr>
<td>1</td>
<td>Head Assembly*, with AW box conn.</td>
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<td>2.3</td>
<td>1.0</td>
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<td>Head Assembly*, with NW box conn.</td>
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<td>Spacer</td>
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<td>190006-02</td>
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<td>Shoe, Terzaghi (blunt)</td>
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#### OPTIONAL ACCESSORIES

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<th>3&quot; O.D. (76.2 mm)</th>
<th>3½&quot; O.D. (88.9 mm)</th>
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<td>5</td>
<td>18&quot; (457.2 mm) paper liner</td>
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<td>24&quot; (609.6 mm) paper liner</td>
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<td>3</td>
<td>Spring retainer (light-duty)</td>
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<td>0.8</td>
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<td>Adaptor ring (for 005420)</td>
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<td>Basket retainer (heavy-duty)</td>
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<td>3</td>
<td>Flap valve</td>
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<td>4</td>
<td>1.7</td>
<td>002421</td>
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</tbody>
</table>

*Includes ball and roll pin.
Sampling Tools

Spoon Sampler

The Spoon Sampler is a solid barrel type sampler equipped with special shoes for recovering samples from non-cohesive materials such as sand and small size gravel.

The samples are disturbed and are, therefore, suitable only for visual inspection in the field or general classification testing in the laboratory.

This sampler is always rotated through the material being tested. It is furnished with two types of shoes: an "Iwan Pattern" for sampling coarse sand and gravel and a "Flat Spiral" for sampling finer sizes of granular material.

Standard barrel length is 60". Other lengths are available.

Complete Sampler—60" (1524 mm) Barrel

<table>
<thead>
<tr>
<th>Size O.D.</th>
<th>Size I.D.</th>
<th>Rod Conn.</th>
<th>Part No.</th>
<th>Weight</th>
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<tr>
<td>2&quot; (50.8 mm)</td>
<td>1½&quot; (38.1 mm)</td>
<td>A</td>
<td>002431</td>
<td>19 lb, 8.6 kg</td>
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<tr>
<td>2½&quot; (63.5 mm)</td>
<td>2&quot; (50.8 mm)</td>
<td>A</td>
<td>002432</td>
<td>33.4 lb, 15.2 kg</td>
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<tr>
<td>3&quot; (76.2 mm)</td>
<td>2½&quot; (63.5 mm)</td>
<td>N</td>
<td>002433</td>
<td>40 lb, 18.1 kg</td>
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<tr>
<td>3½&quot; (88.9 mm)</td>
<td>3&quot; (76.2 mm)</td>
<td>N</td>
<td>002434</td>
<td>50.3 lb, 22.8 kg</td>
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<tr>
<td>4&quot; (101.6 mm)</td>
<td>3½&quot; (88.9 mm)</td>
<td>N</td>
<td>002435</td>
<td>60.7 lb, 27.5 kg</td>
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NOTE: Complete sampler includes both the Iwan and flat spiral shoes.

Replacement Parts

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<th>2½&quot; O.D. (63.5 mm) Part No.</th>
<th>3&quot; O.D. (76.2 mm) Part No.</th>
<th>3½&quot; O.D. (88.9 mm) Part No.</th>
<th>4&quot; O.D. (101.6 mm) Part No.</th>
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<tr>
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<td>002410</td>
<td>002411</td>
<td>002412</td>
<td>006453</td>
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<td>006354</td>
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<td>4</td>
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<td>006365</td>
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<td>60&quot; (1524 mm) Barrell</td>
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<td>Iwan Shoe</td>
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<td>Spiral Shoe</td>
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Weights are not listed for parts weighing less than 1 lb (.45 kg).

*Includes ball and roll pin.
PURCHASING TRACKING SYSTEM
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<th>VENDOR</th>
<th>DESCRIPTION</th>
<th>POINT OF CONTACT</th>
<th>PHONE #</th>
<th>COMMENTS</th>
<th>REQUIRED DATE ENTERED BY</th>
<th>IN PRTS</th>
<th>PO DATE</th>
<th>PO RESENT BY VENDOR</th>
<th>SHIP DATE</th>
<th>ANTICIPATED SHIP DATE</th>
<th>ACTUAL SHIP DATE</th>
<th>SHIP DESTINATION</th>
<th>ACTUAL DELIVERY DATE</th>
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<tr>
<td>Hilti</td>
<td>0F-monitoring lab rental</td>
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<td>607-852-4460</td>
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<td>/ /</td>
<td>11/16/79</td>
<td>/ /</td>
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<td>Chuck</td>
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<td>10/18/90</td>
<td>805.204</td>
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<td>Fork-Lift Rental</td>
<td>Cliff Evans</td>
<td>602-471-4528</td>
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<td>10/22/90</td>
<td>10/26/90</td>
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<td>602-346-7090</td>
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<td>10/16/90</td>
<td>10/17/90</td>
<td>806.425</td>
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<td>Dennis Humphrey</td>
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<td>11/13/90</td>
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<td>John Bower</td>
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<td>12/15/90</td>
<td>11/16/90</td>
<td>806.626</td>
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<td>Jody Perkins</td>
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<td>10/19/90</td>
<td>10/21/90</td>
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<td>11/15/91</td>
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<td>10/24/90</td>
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<td>H2O Systems</td>
<td>Spin gas cylinder 1100rpm</td>
<td>Dick 617-961-6450</td>
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<td>615-542-6210</td>
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MEDICAL FORMS

(The Medical History Form, Medical Examination Form, Personal Information Card, and Denatal Examination Form are still being typeset.)
Dear Greenland Participant:

It is most important to be physically qualified in order to participate in a Greenland science program under the auspices of NSF/DPP. Enclosed please find the following:

1) Physician's Instruction Letter (Attachment A)
2) Medical History Form (Attachment B)
3) Medical Examination Form (Attachment C)
4) Medical Examination Release Form (Attachment D)
5) Personal Information Card (Attachment E)
6) Cover Letter to Dentist (Attachment F)
7) Dental Examination Form (Form 603) (Attachment G)
8) Privacy Act Compliance (Attachment H)

These should all be completed by you and your doctors. Please return all forms (keep green copy for yourself), required x-rays, and lab tests to:

Medical Director
National Science Foundation
1800 G. Street N.W., Room 439
Washington, D.C. 20550
202-357-7775

The forms must arrive at the PICO UAF office at least 6 weeks prior to your planned departure to allow time for evaluation for participation in the Greenland science program. This information will be maintained in accordance with Public Law 93-579 (Privacy Act of 1974). An explanation of this Privacy Act is enclosed as attachment H. The original medical forms will be held by the Medical Director of NSF.

Those participants who were physically qualified for the U.S. Antarctic Program during the previous season are exempt from this examination. However, you must notify the Medical Director (NSF) of this, and forward copies of your antarctic medical examination forms with statement of your current health and indicate any interim medical problems.

Thank you for your cooperation in this matter.

Sincerely,

John J. Kelley
Director

MED-1
Dear Doctor:

Your patient is being considered for participation at a remote field camp on and around the Greenland Ice Sheet. From sea level, the camp is located on the summit of the Greenland ice cap at an effective altitude of about 13,000 ft. Summer temperatures may be below -15°C. Potential medical problems are compounded by possible major delays and difficulties in air evacuation of the sick or injured. A priority of the National Science Foundation is to insure the safety and health of each participant through a pre-deployment medical screening process which takes into consideration the inherent risks of work in this environment. Extensive medical screening is imperative to insure the absence of physical conditions which require close medical follow-up, could be adversely affected by loss of medication, or restricts an individual's activities and creates a burden to his/her associates.

You, as the examining physician, are a key factor in the program's success. A thorough history and physical examination are mandatory each year within six months of deployment. All positive findings must be explained fully and further evaluation should be conducted as necessary. Your personal opinion and comments will be extremely helpful in determining the examinee's fitness for Greenland duty. Conditions which are disqualifying include:

- Coronary Atherosclerotic Heart Disease
- Chronic Obstructive Pulmonary Disease/Asthma
- Diabetes Mellitus (Type I or II)
- Any Endocrinopathy requiring hormonal treatment
- Inflammatory Bowel Disease
- Acute or Chronic Hepatitis
- Seizure Disorders
- Any Axis I or II Psychiatric Diagnoses
- Pregnancy
- Chronic Low Back Pain
- Recurrent Renal Calculi
- AIDS or positive HIV antibody
- Hypertension requiring greater than two medications for adequate control

Please note any prior Arctic/Antarctic or isolated duty the examinee has had. Specific examination requirements and general information are listed in the enclosure.

Once found physically qualified by you, the examinee's health record will be reviewed by the National Science Foundation Medical Director and the final decision for approval, waiver or disapproval will be made by the Director of the Division of Polar Programs, in consultation with the Medical Director.
Mail the original, with pink and yellow copies, of the complete history and physical examination to the following address. Please include all radiology and laboratory reports as well as the original EKG.

Medical Director
National Science Foundation
1800 G Street, N.W., Room 439
Washington, D.C. 20550
202-357-7775

Personnel who have conditions which are disqualifying, but whom you consider capable to perform the duties required of them, may request a waiver from the Director, Division of Polar Programs, N.S.F. via the above address. Waivers will be handled on a case-by-case basis and will be reviewed annually. Specialty consultation will generally be required prior to consideration of a waiver.

The following laboratory studies require:

1. Complete History and Physical Examination.
2. CBC including WBC sound and platelet estimate.
3. Urinalysis with microscopic examination.
4. Syphilis Serology.
5. Blood type and RH factor.
6. Chest X-ray PA and Lateral (size 14" x 17") within six months of initial deployment, every five years thereafter or upon clinical indication.
7. 12-lead EKG as baseline and annually for all persons.
8. Cervical Pap Smear on all women.
9. Serum Cholesterol and Triglycerides for all persons age 35 and over.
10. Intraocular Pressure for all persons age 40 and over.
11. Hemoglobin Electrophoresis on all individuals with a family history of hemoglobinopathy.
12. Fasting Blood Glucose performed on two separate occasions for all persons with a family history of diabetes mellitus or a positive urinalysis for glucose. If greater than 140 mg/dl on either occasion, an internal medicine referral is mandatory.
13. Blood Chemistry including electrolytes, SGOT, SCPT, GGT, Bilirubin, BUN, creatinine and glucose if taking diuretics.
14. Exercise Stress Testing is strongly recommended for all persons age 40 and over or with significant cardiac risk factors.
15. HIV antibody testing is required in order to maintain a walking blood bank.

Vaccination/Skin Testing:

1. Tetanus (booster within last 10 years in addition to a full series).
2. Tuberculin Skin Test (Mantoux) annually. (Can be waived if chest X-ray within previous 12 months is within normal limits.)
Other Requirements:

(1) Prescription Eyewear - persons requiring prescription eyewear are required to have two pairs, one of which must be sunglasses; as well as a current prescription recorded in their health record.

(2) Prescription Drugs - persons requiring chronic medications are required to bring sufficient supply of their own medications to last through the entire deployment. Please note all medications that the examinee is currently taking in their health record.

Thank you for your assistance with this process. If you desire, please contact me at the address or phone number listed below to discuss items in greater detail or for any additional information.

COMPLETED EXAMINATION FORMS SHOULD BE SENT TO:

MEDICAL DIRECTOR
NATIONAL SCIENCE FOUNDATION
1800 G STREET, N.W., ROOM 439
WASHINGTON, D.C. 20550
202-357-7775

Sincerely,

Robert Ingram, M.D.
MEDICAL EXAMINATION RELEASE FORM

Completed by: __________________________

To Dr. __________________________
(examining physician's name)
______________________________
(address)
______________________________
(state)

I authorize you to release all medical information pertaining to me to the National Science Foundation and, if necessary, discuss your findings with the Medical Director, NSF 202-357-7775. The information is needed to process my application for employment or service in Greenland. Transmission of this information would normally be via mail, but in certain instances due to time, transmission via electronic mail or telephone discussion with Medical Director, NSF is authorized.

______________________________
Signature of Applicant or Grantee

______________________________
Date

(This form to be retained by physician)
Dear Dentist:

This individual is being considered for participation in one of the United States Polar Research Programs in Greenland. Because of Greenland's isolation and lack of dental facilities, program participants must be in top dental condition before leaving the United States; i.e. no caries, no periodontal disease, no endodontic problems, no impacted third molars, no severe prosthetic deficiencies or other significant oral problems.

Your patient will be working at about 13,000 ft., on the Greenland ice cap. The dental examination you perform in support of this qualification process requires mouth mirror and explorer probe exam, periodontal exam, and appropriate x-ray coverage. Examination results should be recorded in section I of the attached Standard Form 603. Should you or a colleague perform dental work to meet the qualifications, each procedure performed should be listed in section III or SF 603.

Posterior double bite-wing x-rays are required yearly for every candidate. Panorex or full mouth x-rays are required for all new candidates and once every five years for repeat personnel. X-rays should accompany the completed examination form. Should you require the x-rays to complete treatment of the candidate, you may forward them later, along with your final statement of dental qualifications.

Scaling prophylaxis and oral hygiene instruction is encouraged.

The completed examination form, the required x-rays, and any other correspondence, should be sent to:

Medical Director
National Science Foundation
1800 G Street, N.W., Room 439
Washington, D.C. 20550
202-357-7775

Thank you for your time and cooperation.

Sincerely,

Robert A. Ingram, M.D.
Medical Director
PRIVACY ACT COMPLIANCE

Medical Examination Form
Dental Examination Form
Medical History Form
Personal Information Card

The above listed forms are necessary to obtain information for your proposed trip to Greenland. This information will be maintained in accordance with Public Law 93-579 (Privacy Act of 1974).

The medical/dental forms will be forwarded to the National Science Foundation, Medical Director, for review and certification of physical qualification for Greenland duty. A sealed copy will be maintained in PICO's field office in Greenland and will only be opened in the event of a medical emergency.

The Personal Information Form, which you will complete prior to your departure, provides information to be used in case of an emergency. These forms are maintained at the National Science Foundation, Medical Director's office in Washington and at PICO's field office in Greenland.
CAMP PERSONNEL
## GISP2 STAFFING 1991

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</table>

**MEDIC SAFETY OFFICER:**

This position will take on additional duties of assisting in camp manager's office.

1. Aircraft and general communications
2. Weather observations
3. Telex screening and operations
4. Pax and cargo movements

**PICO EMPLOYEES:**

29 AT HIGH CAPACITY
24 AT NORMAL CAPACITY

**SUBJECT:** GISP2 1991 STAFFING
**PRESENTER:** JAY KLINCK
**STATUS:** DISCUSSION
GISP2
PHASE-UP PLAN
PHASE UP FOR GISP2 1991

PUT IN FLIGHT  12 PICO

CAMP MGR  1
EQUIPMENT OPERATOR  1
MEDIC/SAFETY  1
MECHANIC  1
Carpenter  3
GFAs  2
COOK  1

SECOND FLIGHT  3 PICO

PLUMBER  1
ELECTRICIAN  1
ASSITANT COOK  1

THE SCIENCE PERSONNEL FOR PHASE UP IS TO T.B.A.

THE REPLACEMENT SKIDOOS SHOULD BE BROUGHT IN ON THE FIRST FLIGHT ALONG WITH RADIO GEAR, FOOD MAKING UP THE PUT IN FLIGHT TO 10,000 LB.

THE REPLACEMENT CAT (IF PURCHASED) SHOULD BE BROUGHT IN AS SOON AS SKIWAY CONDITIONS ARE ACCEPTABLE TO THE AIR FORCE -

<table>
<thead>
<tr>
<th>TASK</th>
<th>MAN HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. OPEN THE BIG HOUSE AND ACTIVATE RADIOS AND WEATHER EQUIPMENT</td>
<td>12</td>
</tr>
<tr>
<td>2. DOCUMENT, SURVEY AND PHOTOGRAPH THE DRIFTING</td>
<td>24</td>
</tr>
<tr>
<td>3. DIG OUT DOOR - PREHEAT THE GENERATOR, CHARGE BATTERIES AND ACTIVATE GENERATORS</td>
<td>16</td>
</tr>
<tr>
<td>4. DIG OUT, PREHEAT AND ACTIVATE THE TUCKER AND OLD 931 CAT</td>
<td>16</td>
</tr>
<tr>
<td>5. REMOVE THE WINDOW COVERS ON THE BIG HOUSE</td>
<td>6</td>
</tr>
<tr>
<td>6. EXCAVATE AND GROOM ACCUMULATED SNOW AROUND BIG HOUSE PLUS BATH AND GENERATOR MODULES PLUS FOOD TRENCH</td>
<td>48</td>
</tr>
<tr>
<td>7. RE-CONNECT THE SEWER AND WATER SUPPLY PIPING ON THE BIG HOUSE</td>
<td>8</td>
</tr>
<tr>
<td>8. ACTIVATE THE MELTER AND WATER SYSTEM TO THE BIG HOUSE</td>
<td>8</td>
</tr>
<tr>
<td>9. DIG OUT THE GROOMER AND REPLACE DAMAGED HYDRAULICS</td>
<td>6</td>
</tr>
<tr>
<td>10. AFTER THE 931 IS STARTED SKIWAY PREPARATION SHOULD BE STARTED</td>
<td>48 *</td>
</tr>
<tr>
<td>11. GROOM AND LEVEL OF THE WEATHERPORT BERTHING &amp; TENT AREAS</td>
<td>8</td>
</tr>
<tr>
<td>12. ERECT BERTHING WEATHERPORTS: INCLUDES HEATERS AND ELECTRICAL THIS WOULD BE 4 PEOPLE 8 HOURS PER STRUCTURE WITH 8 STRUCTURES</td>
<td>32 EA. 256</td>
</tr>
</tbody>
</table>
13. DIG OUT LAB VAN AND CORE PROCESSING TRENCH WEATHERPORT 48
14. EXCAVATE REAR ENTRANCE OF CORE PROCESSING TRENCH 8
15. STABILIZE CORE PROCESSING TRENCH ROOF T.B.A.
16. DISMANTLE AND RELOCATE C.P. ENTRANCE WEATHERPORT TO BERTHING 75
16. ERECT NEW ENTRANCE TO CORE PROCESSING TRENCH T.B.A.
17. CONSTRUCT NEW ENCLOSURE FOR WINCH AND CORE BARREL T.B.A.
18. REMOVE CAP FROM DOME CENTER 12
19. DIG OUT SIDE LABS IN C.P. TRENCH 150
20. INSTALL VENTILATION AND WIRING 48
21. ENLARGE FREEZER UNIT 36
22. RELOCATE COMPRESSOR UNIT OFF THE SIDE OF THE DOME 56
23. DRILLERS REQUIREMENTS T.B.A.

SUB TOTAL 887

FOR INCLEMENT WEATHER AND OTHER UNFORESEEN CONDITIONS 25% WAS ADDED TO ABOVE FIGURES

* THE PHASE UP TIME LARGELY DEPENDS ON HOW MUCH DRIFTING WILL BE REALIZED AND WHAT CONDITION ARE FOUND WHEN WE PUT IN.
PHASE UP PLAN FOR DRILLING OPERATIONS
1991 SEASON

<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIG OUT - OPEN UP DOME</td>
<td>1 DAY</td>
</tr>
<tr>
<td>CLEAN OUT &amp; REORGANIZE DOME CONTENTS</td>
<td>4 DAYS</td>
</tr>
<tr>
<td>BUILD DOGHOUSE FOR 4000 METER WINCH</td>
<td>7 DAYS</td>
</tr>
<tr>
<td>BUILD DOGHOUSE FOR TILT TABLE</td>
<td>2 DAYS</td>
</tr>
<tr>
<td>INSTALL 4000 METER WINCH</td>
<td>7 DAYS</td>
</tr>
<tr>
<td>INSTALL NEW TILT TABLE</td>
<td>4 DAYS</td>
</tr>
<tr>
<td>INSTALL CORE TABLE</td>
<td>2 DAYS</td>
</tr>
<tr>
<td>SET UP BUTYL FARM</td>
<td>3 DAYS</td>
</tr>
<tr>
<td>DRILL ASSEMBLY &amp; TEST</td>
<td>2 DAYS</td>
</tr>
<tr>
<td>DEBRIS RECOVERY</td>
<td>2 DAYS</td>
</tr>
</tbody>
</table>

3 WEEKS FROM ARRIVAL TO COMMENCEMENT OF DRILLING
CAMP MEDIC
JDQ
UNIVERSITY OF ALASKA

JOB DESCRIPTION QUESTIONNAIRE

This form is used to evaluate non-exempt jobs at the University of Alaska. A position evaluation is conducted to determine specific job requirements for new and/or existing jobs through establishing the appropriate salary range, job category and title for the position.

The results of the evaluation are determined by a variety of factors, each of which is addressed in the questionnaire.

This questionnaire is to be completed by the person in the position. If it is a new job, the questionnaire is to be completed by the supervisor.

It is recommended that you contact your HRD/Personnel Office and obtain any reference materials and/or guidance before completing the questionnaire. Please respond to each question carefully and completely.

When writing this questionnaire, please describe the job as it actually exists, not as you would like the job to be. This questionnaire seeks to provide information so that the content of the job can be evaluated, not your performance.

NAME_________________________ DATE December 7, 1990

POSITION TITLE Camp Medic JOB CODE #_________

Current Salary Range _______ Position #_______ Fund Source______

Department, Division, School, Institute Polar Ice Coring Office

Immediate Supervisor Jay Klinck Camp Manager

Name

Title

Dean, Director, Dr. John Kelley Director

Department Head Name

Title
### PRIMARY RESPONSIBILITIES

List your position's primary responsibilities in order of their importance. Under each responsibility, include a list of the specific tasks which make up that responsibility. Indicate whether these tasks are performed regularly (R), occasionally (O) or seldom (S).

<table>
<thead>
<tr>
<th>R</th>
<th>O</th>
<th>S</th>
<th>Primary Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Provide medical services as required to camp personnel. This is to include first aid through advanced life support and extended patient care as applicable and feasible. In coordination with PICO management, GISP2 Science Management Office and medical consultants, begin to define level of medical service and emergency medical care appropriate and feasible at GISP2 as administered by a certified EMT III or Paramedic. This process should include an assessment of injuries and illness likely to occur in this setting. This includes medical emergencies, environmental injuries, and non-traumatic diseases.</td>
</tr>
<tr>
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<td></td>
<td>With assistance from Camp Manager, continue assessment of camp first aid and medical services, supplies and equipment. Organize and document recommendations as required. In coordination with UAF Risk Management Office, define legal standard by which the camp medic will perform designated duties. If agreed standard is defined as those laws that govern EMS practitioner within the State of Alaska, assess implications of operating within a foreign country. (The UAF rescue squad may be a model situation to use in your review). The intent of this assessment is to assess the liability provided, such as restrictions on intravenous infusions, administering of drugs or other advanced life support procedures. These procedures will be coordinated with the United States Air Force Medical Officer at Sondrestrom AFB, Greenland.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Assess current inventory of first aid and medical supplies in place at the GISP2 site and develop inventory of required equipment, supplies, and medications necessary to keep pace with the elevated standard of care obtainable as administered by a Paramedic or EMT III. This should be defined within the practical limitations of remote site operations. Such equipment may include first responder or paramedic kits.</td>
</tr>
</tbody>
</table>
Assemble all documentation, report forms and resource materials required to accomplish the task and to provide complete documentation of any and all care given on site.

Assisting the Camp Manager's office. This includes organizing and distributing daily telexes, maintaining contact with incoming aircraft and relaying real time, weather information as required flight line conditions, etc.

Assist GFA with outside chores. This includes preparing pallets for retrograde, fueling of camp, maintaining cargo lines, and inventory control for camp supplies.
UNIVERSITY OF ALASKA
JOB DESCRIPTION QUESTIONNAIRE

A. CERTIFICATES OR LICENSES

List any certificates or licenses required for the job:

________________________________________________________________________

List the equipment, office machines or tools used in the job:
Blood pressure gauges, stethoscope, computers (both IBM and MacIntosh),
HF and VHF radios.

________________________________________________________________________

B. COMPLEXITY OF DUTIES

In what ways does this job require resourcefulness, originality and/or
initiative in performing the tasks described in the first part of this
questionnaire? Give examples.

________________________________________________________________________

________________________________________________________________________

What kinds of decisions must you make in order to accomplish those
tasks? Give examples.

________________________________________________________________________

________________________________________________________________________
C. GUIDELINES

What policies, regulations or procedures guide the work of this job?

State of Alaska and foreign laws that govern EMT III practitioners. Will also have to follow the UAF Risk Management policies and procedures.

D. DEGREE OF SUPERVISION RECEIVED

How frequently is instruction given?

Daily interface with the Camp Manager.

How often is work done by the person in this job checked? (Is all work checked? Is it reviewed in stages? Are only completed projects reviewed?)

Only work that will be reviewed is the office work.

What kinds of decisions are made without supervisor approval?

Most medical decisions, however, the medic will be able to confer with the doctor at the main base in Sondrestrom that the USAF operates.

E. IMPACT

What is the impact of work produced or services provided?

This position could be life saving in certain situations.
F. CONFIDENTIAL DATA

Does this job work with confidential materials or papers?

Patient/medic confidentiality.

Describe the nature of your confidential work. (For example: files faculty tenure records; types confidential memos, letters, etc.; processes payroll actions; responsible for assuring safety of records.)

Medical forms and individual medical histories.

Is this job responsible for keys, cash or the security of others?

Yes: Class "A" drugs.

G. CONTACTS WITH OTHERS

List the kind and frequency of contacts with:

Workers within department.

The medic will interface with the entire camp on a daily basis. Medical duties only on an as-needed basis.

Faculty and staff within other departments.

Public.
UNIVERSITY OF ALASKA
JOB DESCRIPTION QUESTIONNAIRE

Students.

H. PHYSICAL DEMANDS/CONDITIONS

Describe the physical demands of the work (Does it involve such physical exertion as climbing, lifting, pushing, stooping, kneeling, crouching, crawling, reaching or balancing?)

All of the above including snow shoveling.

Are physical demands occasional? _____ frequent? X _____ continual _____
(Give examples) Equipment at GISP2 is limited and requires all camp staff to assist
when opening and digging out the camp, loading and unloading aircraft, etc.

J. WORK ENVIRONMENT

Describe the work environment (Does it include any risk? Any discomfort? If yes, is the risk or discomfort mild? moderate? severe? Does it occur occasionally? frequently? continually?)

It is cold, unforgiving weather at times. The camp is at an altitude equivalent
to 12,000 ft. This person will also be working around running aircraft.

K. DIRECT SUPERVISION EXERCISED

Does this position supervise others? (List titles of positions supervised)

When medical assistance is required, this person would be in charge. All other
times, no supervising is done by this person.
UNIVERSITY OF ALASKA
JOB DESCRIPTION QUESTIONNAIRE

Indicate the type of supervision given to others (for example, complete overall supervision including hiring, assign work and give instructions for handling assigned work, verify or check work performance).

Supervising will only take place in the event of a medical emergency.

Questionnaire completed by: ____________________________  ____________________________
(Please sign)  Employee  Date

Contents approved by: ____________________________  ____________________________
(Please sign)  Immediate Supervisor  Date

Contents approved by: ____________________________  ____________________________
(Please sign)  Dean, Director, Dept Head  Date

PLEASE NOTE: Signature signifies agreement that the contents of this JDQ are an accurate representation of this job.
June 27, 1991

Fellow Communicators:

Here are our subgroups, compiled from responses to my earlier query. Our next meeting will be Tuesday, July 17, from 11:00 a.m. to 1:00 p.m. in the Wood Center Memorial Conference Room. I will send an agenda later. If anyone wants to meet in subgroups before then, it is up to you to contact fellow subgroupers to set up your meeting. If you have not joined a subgroup, but would like to, let me know and I will add your name wherever you want.

<table>
<thead>
<tr>
<th>Editors</th>
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<tbody>
<tr>
<td>Jackie Stormer</td>
<td>7939</td>
<td></td>
</tr>
<tr>
<td>Laura Anderson</td>
<td>7491</td>
<td></td>
</tr>
<tr>
<td>Sue Keller</td>
<td>6703</td>
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<tr>
<td>Caroline Collings</td>
<td>7909</td>
<td></td>
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<tr>
<td>Lisa Sporleder</td>
<td>6705</td>
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<tbody>
<tr>
<td>Susan Burroughs</td>
<td>7948</td>
<td></td>
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<tr>
<td>Deb Coccia</td>
<td>7250</td>
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<tr>
<td>Lisa Sporleder</td>
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<thead>
<tr>
<th>Photographers/Videographers</th>
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<tbody>
<tr>
<td>Susan Burroughs</td>
<td>7948</td>
<td></td>
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<thead>
<tr>
<th>Managers/Producers</th>
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<tbody>
<tr>
<td>Sandy Wolf</td>
<td>7751</td>
<td></td>
</tr>
<tr>
<td>Sue Keller</td>
<td>6703</td>
<td></td>
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</tbody>
</table>

| Debra Damron                | 7581         |
| Kathy Kolodge               | 6370         |
| Kurt Byers                  | 6702         |

<table>
<thead>
<tr>
<th>Writers/Information Officers</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Suzanne Bishop</td>
<td>7588</td>
<td></td>
</tr>
<tr>
<td>Debra Damron</td>
<td>7581</td>
<td></td>
</tr>
<tr>
<td>Kathy Kolledge</td>
<td>6370</td>
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<tr>
<th>Composers/Desktop Publishers</th>
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<tbody>
<tr>
<td>Sandy Wolf</td>
<td>7751</td>
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<td>Susan Burroughs</td>
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<td>Rae Ammons</td>
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