

Lake Harbour Truckfill Station
Water Delivery Component Description
Table 4.1

DIA.	ITEM NO.	SECT.10 TAB	COMPONENT	FUNCTION	REMARKS
3/4.3	18	10.9	Normal Power Indicator	Green light indicating that NWTTC power is being used	Push light to test
3/4.3	19	10.9	Transfer Switch Toggle Switch	Allows testing standby power system or switching manually to genset power	"Auto" - genset will come on automatically on power outage "Test" - tests transfer switch and switches power to genset "Man" - bypass transfer switch controls and starts genset
3/4.3	20	10.9	Manual Transfer Switch	Allows manual transfer to genset supplied power	Rotate clockwise and turn switch 31 and 'man'.

4. ENGINE CONTROL PANEL

4/4.3	21	10.9	Engine Control Panel	Displays engine alarms, voltage, current and frequency	See Section 6.5.3 for description of engine alarms. Turn switch 31 to 'off' to reset alarm lights
4/4.3	22	10.9	Engine Control Panel Light	Light for control panel	Operated by switch 23
4/4.3	23	10.9	Panel Light Switch	Turns light 22 on and off	
4/4.3	24	10.9	Engine Hour Meter	Records time engine is running	
4/4.3	25	10.9	Engine Oil Pressure Meter	Indicates engine oil pressure	
4/4.3	26	10.9	Engine Temperature Meter	Indicates engine cylinder head temperature	
4/4.3	27	10.9	Engine Alarm Horn	Buzzer to indicate engine alarm condition	Push switch 28 to silence
4/4.3	28	10.9	Horn Silence Button	Press button to silence horn 27	
4/4.3	29	10.9	Lamp Test Button	Press button to test engine alarm lights on panel 21	All alarm lights on panel 21 should light up when pushed
4/4.3	30	10.9	Engine Control Panel Fuse	Provides overload protection for engine panel	Six spares fuses supplied
4/4.3	31	10.9	Engine control switch	Allows for automatic or manual starting of engine	'Auto' - genset starts automatically on power outage 'Man' - starts genset 'Off' - turns off genset manually
4/4.3	32	10.9	Genset Battery Voltmeter	Indicates voltage of genset battery	
4/4.3	33	10.9	Meter Select Switch	Allows selection of phase for display on panel 21 meters	

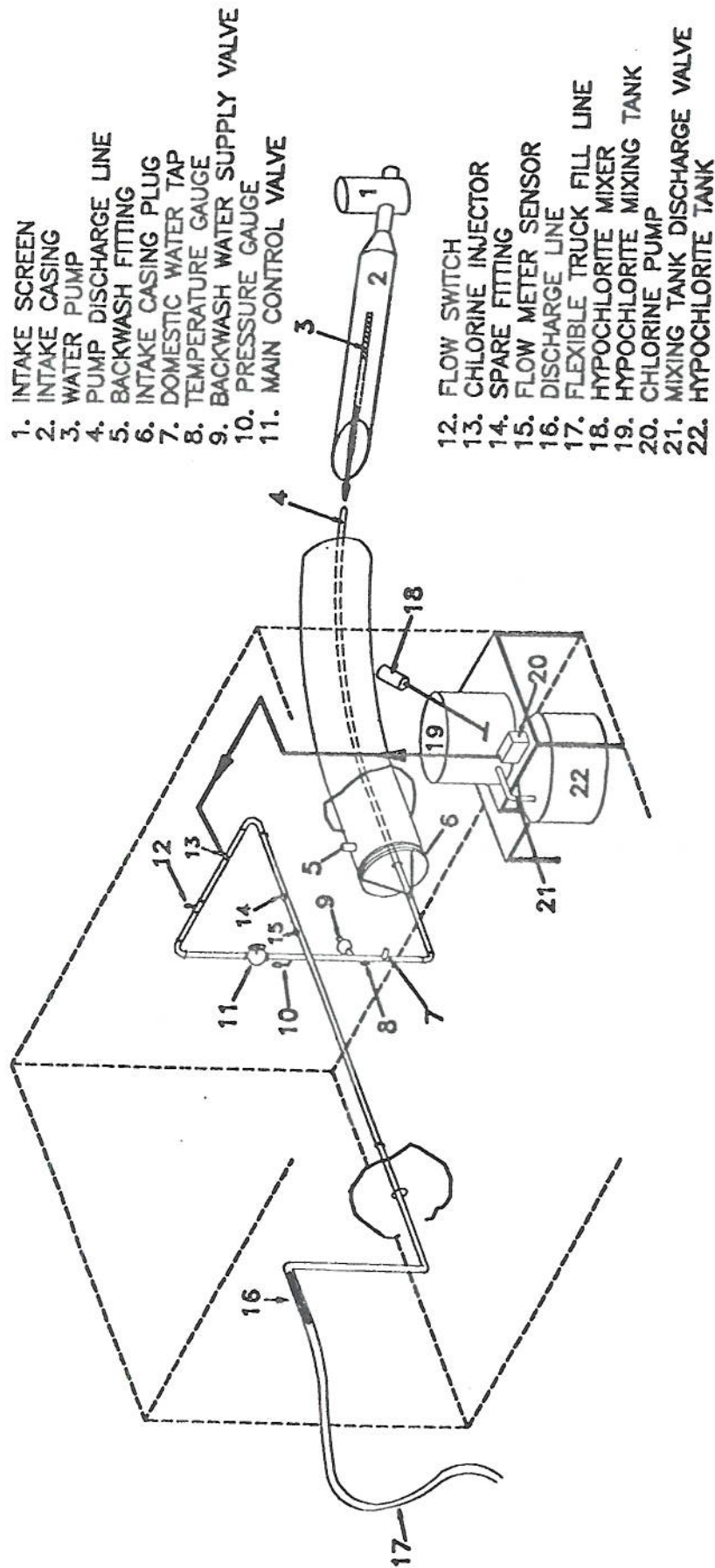
Lake Harbour Truckfill Station **Water Delivery Component Description** **Table 4.1**

DIA.	ITEM NO.	SECT.10 TAB	COMPONENT	FUNCTION	REMARKS
4.4	1		Future NW/TPC Power	Future electric power supply from NW/TPC power lines	Future - 120/208V, 100A, 3 phase, 4 wire overhead service
4.4	2		Electric Meter Base without meter	Records electricity consumption by truckfill station	Future meter owned by NW/TPC
4.4	3	10.8	Main Breaker (Future)	Main disconnect from NW/TPC power & provides protection against short circuits and overload on power system	Located in engine room. 100A 3 pole switch
4.4	4		Ground Grid	Provides ground for truckfill station components	Located in lake, buried under intake line berm
4.4	5	10.9	Transfer Switch	Automatically turns on generator during NW/TPC power outage	100A, 3 pole. See also 4.3 for panel description
4.4	6	10.9	Generator Breaker Switch	Main disconnect from genset power & overload protection	Located on genset. 70A, 3 pole switch
4.4	7	10.9	Genset	Provides power is NW/TPC power fails	Air cooled, 2 cylinder 30 HP diesel. 15kW alternator
4.4	8	10.8	Main Distribution Panel	Distributes power to components	Individual breakers for components
4.4	9	10.2	Ground Fault Protection Panel	Shuts off power to water pump in the event of a short circuit	Press to test and reset buttons on front panel
4.4	10	10.8	Magnetic Pump Starter	Overload protection for pump	
4.4	11	10.2	Water Pump	Pumps water to fill water truck	Grundfos 5 HP submersible turbine pump
4.4	12	10.14	Heat Trace Controller	Turns heat trace on & off to keep intake casing at approx. 1°C	Ammeter and pilot lights on panel to indicate operation
4.4	13	10.14	Intake Duty Heat Trace	Keeps intake casing and discharge line from freezing	Self regulating heat trace rated at 27.5 W/m
4.4	14	10.14	Intake Spare Heat Trace	Used if duty heat trace fails or to provide extra heat for thawing	Direct plug into receptacle. Rated at 27.5 W/m
4.4	15	10.6	Duty Heater Thermostat	Controls duty IR heater to maintain engine room temp at 10°C	
4.4	16	10.6	Engine Room Duty Heater	Primary infrared heater in engine room	1000 watt infrared heater, ceiling mounted
4.4	17	10.6	Standby Heater Thermostat	Controls standby heater in engine room. Set at 0°C	Standby heater will come on if door open or duty fails
4.4	18	10.6	Standby Engine Room Heater	Standby infrared heater in engine room	1000 watt infrared heater, ceiling mounted
4.4	19	10.6	Duty Heater Thermostat	Controls duty IR heater to maintain pump room temp at 10°C	
4.4	20	10.6	Pump Room Duty Heater	Primary infrared heater in pump room	1000 watt infrared heater, ceiling mounted

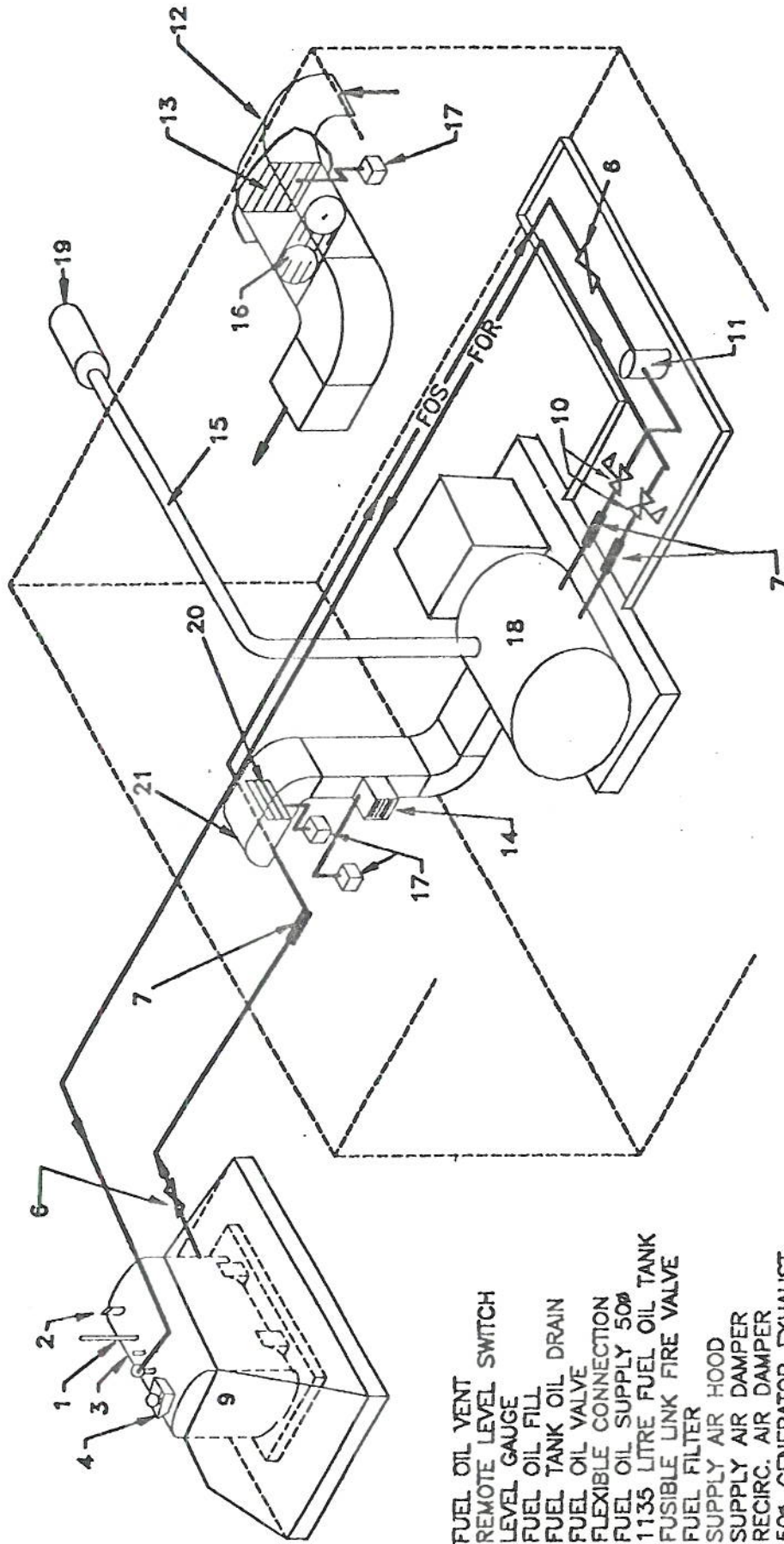
Lake Harbour Truckfill Station
Water Delivery Component Description
Table 4.1

DIA.	ITEM NO.	SECT.10 TAB	COMPONENT	FUNCTION	REMARKS
4.4	21	10.6	Standby Heater Thermostat	Controls standby heater in pump room. Set at 5°C	Standby heater will come on if door open or duty falls
4.4	22	10.6	Standby Pump Room Heater	Standby infrared heater in pump room	1000 watt infrared heater, ceiling mounted

4.2 Water Delivery System Diagram



4.3 Generator Diagram

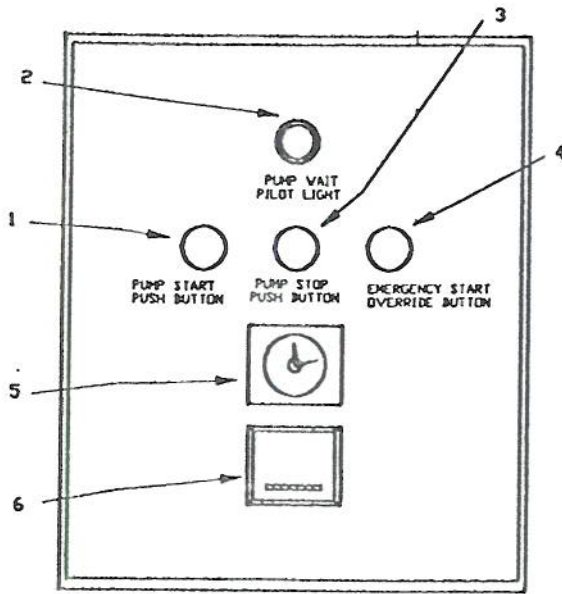


1. FUEL OIL VENT
2. REMOTE LEVEL SWITCH
3. LEVEL GAUGE
4. FUEL OIL FILL
5. FUEL TANK OIL DRAIN
6. FUEL OIL VALVE
7. FLEXIBLE CONNECTION
8. FUEL OIL SUPPLY 50ℓ
9. 1135 LITRE FUEL OIL TANK
10. FUSIBLE LINK FIRE VALVE
11. FUEL FILTER
12. SUPPLY AIR HOOD
13. SUPPLY AIR DAMPER
14. RECIRC. AIR DAMPER
15. 50ℓ GENERATOR EXHAUST
16. SUPPLY AIR FAN
17. THERMOSTAT
18. GENSET
19. MUFFLER
20. RELIEF AIR DAMPER
21. RELIEF AIR HOOD

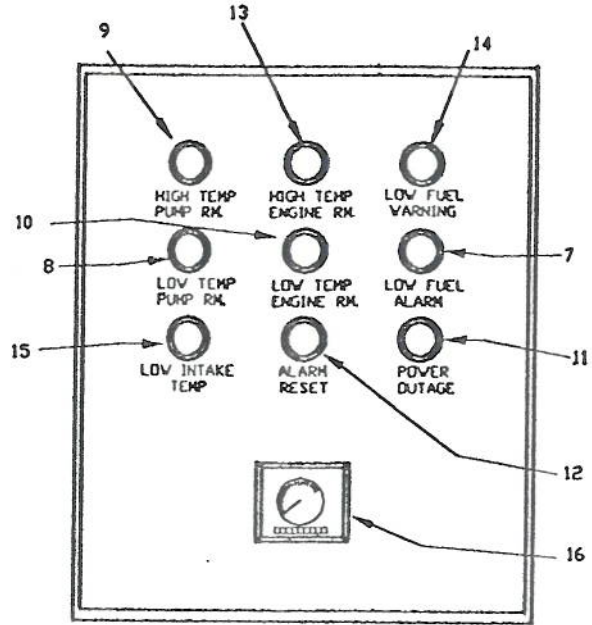
FOS & FOR ON OPPOSITE SITE OF GENERATOR
 DEPICTED ON NEAR SIDE FOR CLARITY ONLY

RELIEF AIR DUCT ON OPPOSITE SITE OF GENERATOR
 DEPICTED ON NEAR SIDE FOR CLARITY ONLY

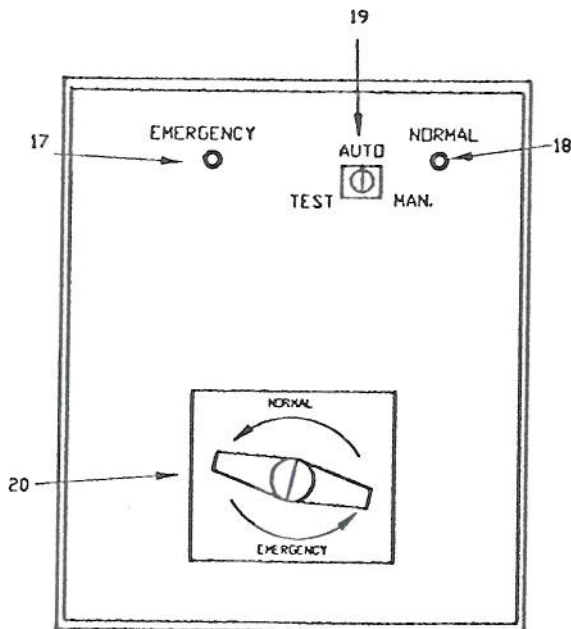
4.4 Control Panels Diagram



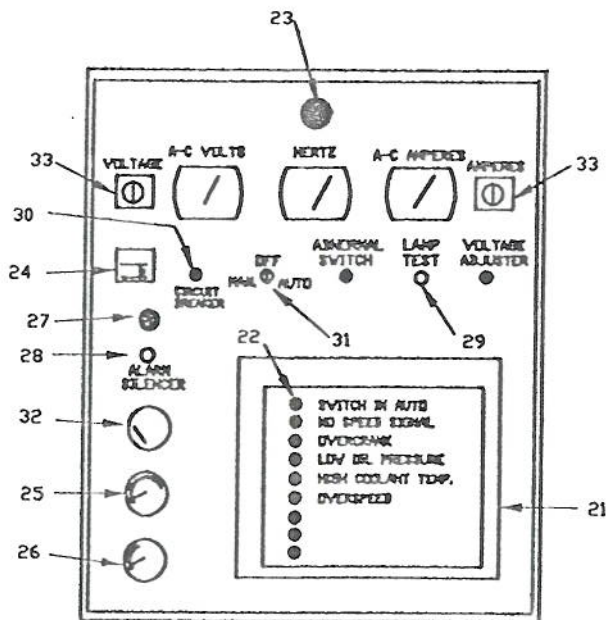
1 OPERATOR CONTROL PANEL
4.4 NTS



2 ALARM/CONTROL PANEL
4.4 NTS



3 TRANSFER SWITCH
4.4 NTS



4 ENGINE CONTROL PANEL
4.4 NTS

PROJECT
LAKE HARBOUR TRUCKFILL STATION

DATE
DEC. 1995

PROJECT #
94-0150

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JPW

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N.T.S.

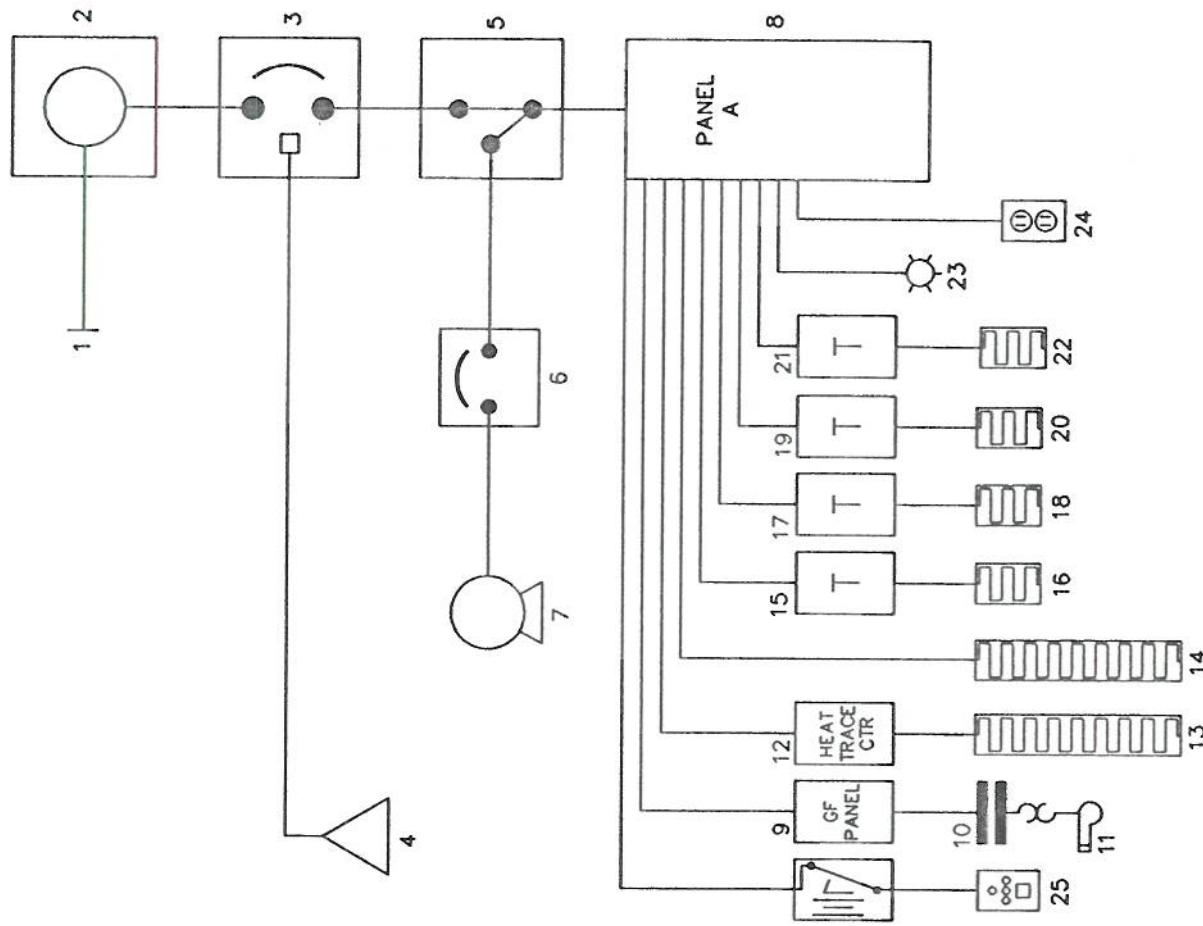
Public Works and Services
Northwest Territories

FERGUSON
SIMEK
CLARK
ARCHITECTS
ENGINEERS + ARCHITECTS
P.O. BOX 1777, YELLOWKNIFE
N.W.T. CANADA X1A 0P4

GROUP

CONTROL PANELS

4.5 Power Distribution Diagram



1. FUTURE CONNECTION TO NWTPC POWER
2. POWER METER BASE WITHOUT METER
3. MAIN BREAKER: 100A, 3 POLE
4. GROUNDING GRID IN LAKE
5. TRANSFER SWITCH: 100A, 3 POLE
6. GENSET BREAKER: 70A, 3 POLE
7. DIESEL GENERATOR: 15kW
8. MAIN DISTRIBUTION PANEL
9. WATER PUMP GROUND FAULT PROTECTION PANEL
10. MAGNETIC STARTER
11. WATER PUMP: 3.73kW, 208V, 3 ϕ
12. HEAT TRACE CONTROLLER
13. INTAKE SHAFT DUTY HEAT TRACE: 13.1kW, 208V, 1 ϕ
14. INTAKE SHAFT STANDBY HEAT TRACE: 13.1kW, 208V, 1 ϕ
15. ENGINE ROOM DUTY HEATER THERMOSTAT
16. ENGINE ROOM DUTY INFRARED HEATER: 1kW, 120V, 1 ϕ
17. ENGINE ROOM STANDBY HEATER THERMOSTAT
18. ENGINE ROOM STANDBY INFRARED HEATER: 1kW, 120V, 1 ϕ
19. PUMP ROOM DUTY HEATER THERMOSTAT
20. PUMP ROOM DUTY INFRARED HEATER: 1kW, 120V, 1 ϕ
21. PUMP ROOM STANDBY HEATER THERMOSTAT
22. PUMP ROOM STANDBY INFRARED HEATER: 1kW, 120V, 1 ϕ
23. LIGHTS
24. BUILDING SERVICE RECEPTACLE
25. UNINTERUPABLE POWER SUPPLY

5. COMPONENT DETAILS

5.1 General

Table 5.2 contains detailed information on equipment, including manufacturer, and model. As well, Table 5.2 contains a list of supplier names and addresses for the equipment, referenced to the brochure number in Section 10.

5.2 Detailed Component and Supplier List

LAKE HARBOUR - TRUCKFILL STATION
TABLE OF COMPONENTS & SUPPLIERS
TABLE 5.2

Section 10 Tab	Section 4 Item	Description	Manufacturer & Setting	Supplier
10.1		Steel/HDPW Transition	Can-Con #T4040	Can-Con Manufacturing 101 - 9333 - 45 Ave., Edmonton, Alberta, T6E 5Z7 Phone (403) 436-1930
10.1		Truckfill Hose 4"	Flex-Arctic Blue	Anderson CP Rubber 9725 - 62 Ave. Edmonton, Alberta, Phone (403) 437-1260
10.1		Backwash Hose 2"	Arctic Flexwing	Anderson CP Rubber 9725 - 62 Ave. Edmonton, Alberta, Phone (403) 437-1260
10.1		14" Casing Flange Adaptor	Robar 7808-14-14.00 FCA 14"	Robar Industries Ltd. 12945 78 th Avenue Surrey, British Columbia Phone (604) 591-5288
10.1		Intake Screen		Tate Andale Canada Ltd. 15 Connie Crescent Concord, Ontario Phone (403) 798-7087
10.1		Gate Valves	Jenkins 810J	Bartle & Gibson Co. Ltd. 13475 Fort Road Edmonton, Alberta, Phone (403) 472-2850
10.1		Groove Joint Couplers Groove Joint Couplers Grooved End Fittings	Victaulic Style 75 Victaulic Style 07 Victaulic	Emco Supply 14440 - 124 Ave Edmonton, Alberta Phone (403) 455-9181
10.1		V-Port Ball Valve	DeZurik Part # 9165697 0400, Fig 551, F, 4, L, MWG3H8	DeZurik Canada Ltd. P.O. Box 1300 Cambridge, Ontario, N1R 5V5 Phone (519) 621-8980

Table 5.2 - Components and Suppliers

LAKE HARBOUR - TRUCKFILL STATION
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Section 10 Tab	Section 4 Item	Description	Manufacturer & Setting	Supplier
10.1		Intake Pipe	Sclair Pipe	CRP Products & Mfg. Ltd. 2129 - 84 Ave Edmonton, Alberta Phone (403) 449-1599
10.1		¾" Hose Bib	Cambridge Brass Sediment Faucets	Lytle Specialties 8221 McIntyre Road Edmonton, Alberta Phone (403) 465-0711
10.1		Robar Saddle	Robar 2706 Service Saddle	Western Water & Sewer 3954 - 76 th Ave Edmonton, Alberta, T6B 2P1 Phone (403) 465-0251
10.2		Submersible Water Pump	Grundfos SP4" Model 225S	Wilron Equipment Ltd. 12607 - 125 Street Edmonton, Alberta Phone (403) 452-4490
10.3		Pressure Gauge	Marsh J9446	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065
10.3		Thermometer Flowmeter Accumulator Paddle Wheel Flow Gauge	Teltru GT 300R Signet Mk575/575R Signet Mk578/579/579R Signet 515/3-8510-XX	Brian Controls 9259 - 48 Street Edmonton, Alberta Phone (403) 468-2123
10.4		Mixing Tank & Storage Tank Mixer Metering Pump & Discharge Valve	Wallace & Tiernan 451-030 Wallace & Tiernan U21751 Wallace & Tiernan 451-020	Perma Engineering Sales 36 Stevenson Road Winnipeg, Manitoba Phone (204) 633-7213
10.4		Colorimeter Test Kit		Perma Engineering Sales 36 Stevenson Road Winnipeg, Manitoba Phone (204) 633-7213

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10.4		Calcium Hypochlorite Powder	Saskatoon Chemicals Ltd. Chloryte	Perma Engineering Sales Ltd. 36 Stevenson Road, Winnipeg, MAN, R3H 0W7 Phone (204) 633-7213
10.5		Flexible Hose	Senior Flexonics Braided Stainless Steel Style 'BSN'	Flexonics Ltd. 6151 - 6 th Street SE Calgary, Alberta, T2H 1L9 Phone (403) 253-7919
10.5		Fuel Filter	Dahl 100 Series	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065
10.5		Fire Valve	Firomatic 300-F	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065
10.5		Vent Cap	OEM Fig 4024	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065
10.5		Oil Storage Tank	Durex Steel & Alloy Ind. 4500 Litre	McIntosh Supply 17404 - 108 Avenue Edmonton, Alberta Phone (403) 483-3201
10.5		De-watering Pump	Monarch V110	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065
10.5		Oil Tank Gauge	Krueger Sentry Type D-2	Premiere Industrial Equipment 14502 - 115 Ave. Edmonton, Alberta, T5M 3B9 Phone (403) 451-1065

Table 5.2 - Components and Suppliers

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10.6		Supply Air Fan F-1	Greenheck SQ 90G	William Holbrook 2910 Parsons Road Edmonton, Alberta, T6N 1A4 Phone (403) 465-3265 Fax (403) 466-8086
10.6		Low Leakage Damper	Ruskin CD35	William Holbrook 2910 Parsons Road Edmonton, Alberta, T6N 1A4 Phone (403) 465-3265 Fax (403) 466-8086
10.6		Damper Linkages Thermostats	Honeywell Q605A Honeywell T921A1522	Sinclair Supply 10914-120 Street Edmonton, Alberta Phone (403) 452-3110
10.6		Heaters	Chromalox CR-3510	Gough 8828 - 48 Ave Edmonton, Alberta Phone (403) 468-2066
10.6		Damper Motor	Honeywell M955	Sinclair Supply 10914-120 Street Edmonton, Alberta Phone (403) 452-3110
10.7		Fire Extinguisher	Ansul Model 20	Levitt Safety 5939 - 99 Street Edmonton, Alberta Phone (403) 436-3730
10.8		Panel Boards	Westinghouse	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920

Table 5.2 - Components and Suppliers

LAKE HARBOUR - TRUCKFILL STATION
TABLE OF COMPONENTS & SUPPLIERS
TABLE 5.2

Section 10 Tab	Section 4 Item	Description	Manufacturer & Setting	Supplier
10.8		Circuit Breakers Combination Starters Ground Fault Breaker		Westburne Electric 13155 - 149 Street Edmonton, Alberta T5L 4L6 Phone (403) 452-3131 Fax (403) 452-3492
10.8		Control Cabinet	NEMA/BEEMAC Type 4, 4x	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920
10.8		Ground Fault Panel	Federal Pioneer GP-2-20	Gough 8828 - 48 Ave Edmonton, Alberta Phone (403) 468-2066
10.8		Motion/Photocell Switches Toggle Switches	Leviton Decora 6775 Leviton 5551/001	Gescan 14840 - 115 Ave. Edmonton Alberta, T5M 3C1 Phone (403) 455-7171 Fax (403) 451-1600
10.8		Wiring Duct	Paraduct PVC Type E	R.L. Brews 10810 - 119 Street Edmonton, Alberta Phone (403) 452-3730
10.9		Engine	Deutz F3L 1011	Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909
10.9		Generator	Stamford AD15-81	Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909

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10.9		Muffler	Cowl Spiral Silencer TXS 20 TR	Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909
10.9		Exhaust Insulation	Manville	Fuller Bartells 11925 - 145 Street Edmonton, Alberta Phone (403) 452-1701
10.9		Transfer Switch		Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909
10.9		Day Fuel Tank	Kohler Kit # 292242	Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909
10.10		Control Panel Push-Buttons Black Green Red	Allen Bradley 800T - D2D1 Allen Bradley 800T - D1D1 Allen Bradley 800T - D6A	Westburne Electric 13155 - 149 Street Edmonton, Alberta T5L 4L6 Phone (403) 452-3131 Fax (403) 452-3492
10.10		Fill Arm Push-Buttons Pilot Light Push-Buttons Red Amber	Allen Bradley 800T - PT16R Allen Bradley 800T - N40 Allen Bradley 800T - N42	Westburne Electric 13155 - 149 Street Edmonton, Alberta T5L 4L6 Phone (403) 452-3131 Fax (403) 452-3492
10.10		Uninterruptible Power Supply	Ferrups FE 500VA	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920

Table 5.2 - Components and Suppliers

LAKE HARBOUR - TRUCKFILL STATION
TABLE OF COMPONENTS & SUPPLIERS
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Section 10 Tab	Section 4 Item	Description	Manufacturer & Setting	Supplier
10.11		Battery Charger	Kohler A-292862	Pritchard Industrial 100 Otter street Winnipeg, MAN, R3C 3A1 Phone (204) 474-5909
10.12		Alarm / Control Panel Relay	Idec RY4S-UL	R.L. Brews 10810 - 119 Street Edmonton, Alberta Phone (403) 452-3730
10.13		Interior Fluorescent Lights	Factorlux ATI-248-0°	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920
10.13		Exterior Buidling HPS	McGraw-Edison MON-2 W2032	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920
10.13		Exterior Alarm Light Base Exterior Alarm Red Lens Exterior Alarm Green Lens	EOL 44507 EOL ML2075	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920
10.13		Emergency Lights	Lumacell RG24S-720	WESCO 14760 - 116 Ave. Edmonton, Alberta Phone (403) 452-7920
10.14		Heat Trace Heat Trace Termination kit Heat Trace Sensor Heat Trace Controller	Thermon PSX 10-2 Accutron SX-TC Accutron RTD Sensor Accutron TS-201	Accutron Systems Ltd. 15885 - 116 Ave. Edmonton, Alberta Phone (403) 452-8653
10.15		Skidframe	Adco Power Contractors	Adco Power 2910 Parsons Road Edmonton, Alberta Phone (403) 465-3265

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10.15		Door & Hardware	Best Locks	Wilson Hollow Metal Sales Ltd. 6491 Northam Drive Mississauga, Ontario Phone (905) 677-4685
10.15		Paint	Glidden	Glidden Paints 24A Rutherford Road Brampton Ontario Phone (905) 453-1933
10.16		Broom Dustpan Measuring cup		Retail Store
10.16		Apron Gloves Respirators Goggles Eyewash Garbage cans	Levitt Safety York Levitt Safety Levitt Safety Levitt Safety	Perma Engineering Sales Ltd. 36 Stevenson Road, Winnipeg, MAN, R3H 0W7 Phone (204) 633-7213
10.16		Geosynthetic		Terrafix Environmental 425 Attwell Drive Rexdale, Ontario Phone (403) 674-0363
10.16		Level Switch	GEMS LS-800	Imo Industries #14 - 5918 - 5 th Street S.E. Calgary, Alberta Phone (403) 253-7491
10.16		Winch	Sure Pull Cupertill Model S7B	Acklands Ltd. 8210 McIntyre Road. Edmonton, Alberta Phone (403) 465-0511