

APPLICATION
FOR APPROVAL
OF GAS PROCESSING FACILITIES
AT THE WASKADA PLANT

OMEGA HYDROCARBONS LTD.

MAY 1983

OMEGA HYDROCARBONS LTD.

WASKADA PLANT

APPLICATION FOR A PERMIT TO CONSTRUCT

AND LICENCE TO OPERATE

1. INTRODUCTION

In accordance with your letter of April 26, 1983, Swinarton Engineering Ltd., on behalf of Omega Hydrocarbons Ltd., hereby makes application to the Oil and Natural Gas Conservation Board for approval to construct and operate the Waskada Plant. The proposed facility will process solution gas from the existing Omega tank battery to recover liquid hydrocarbon products and residue gas.

The design capacity of the gas plant is $84.5 \text{ } 10^3 \text{ m}^3/\text{d}$ (3.0 MMSCFD) of raw inlet gas. The recovered propane and butane products will be marketed as separate products. The recovered condensate will be blended with the crude oil from the battery. The residue gas is planned to be reinjected.

2. GENERAL MATTERS

2.1 Plant Location and Topography

The plant will be located on a site adjacent to the existing Omega tank battery in LSD 11-30-1-25 WPM.

1505023) Exhibit 1 consists of two topographical maps of the area. Map 1 shows the general topography within 16 kilometers (10 miles) of the site. Map 2 shows the location of the plant site, water courses, buildings and topographical features. There are no other gas processing plants in this area. The general land use of the area is agricultural.

Drawing No. D-8314-L-01 is a plot plan showing the layout of equipment associated with the gas plant and the tank battery. This drawing gives the location of the compressor engine exhaust stack and the flare stack.

The gas processing facility has been situated adjacent to the tank battery since it is the source of the solution gas feedstock stream and also to take advantage of common facilities such as electrical power, oil storage and waste water disposal.

2.2 Communications with Local Residents

In keeping with the fact that the proposed gas plant will have only a very localized impact on residents and, in any case, should improve the present impact on the environment; Omega plans to communicate directly with all residents within a 1.6 kilometer (1.0 mile) radius of the plant site. Of the two residences within this radius, the the proposal has already been discussed with Mr. Trewin.

2.3 Process Scheme

The proposed processing scheme is depicted on the process flow sheets, Drawing No.s D-8314-F-01, 02 and 03. A detailed process description is given in Exhibit 2.

3. CONSERVATION LEVELS

3.1 Plant Material Balance

The Waskada Plant is designed to process $84.5 \times 10^3 \text{ m}^3/\text{d}$ (3.0 MMSCFD) of raw gas into $65.0 \times 10^3 \text{ m}^3/\text{d}$ (2.3 MMSCFD) of sweet residue gas, $32 \text{ m}^3/\text{d}$ (200 BPD) of propane, $13.5 \text{ m}^3/\text{d}$ of butane (85 BPD) and $5 \text{ m}^3/\text{d}$ (29 BPD) of condensate. (sweet dry gas) (pentanes) +

The design composition of the raw gas has been based on the analysis of a representative sample taken on the treater gas during normal operating conditions. This composition is given in Exhibit 3 under Stream No. 1. A material balance based on the plant design capacity and normal operating conditions is presented in Exhibit 3.

The plant material balance illustrates the conservation of the hydrocarbons from the tank battery that would have been flared. Under normal operating conditions, the hydrocarbons entering the plant are converted to reinjection gas, propane, butane and condensate except for the fuel gas required to operate the plant. The plant, under normal operating conditions, is designed to have no gas going to flare except for the acid gas stream. During emergency situations, gas will be flared through a closed flare system to the blowdown stack. *

The plant is designed to recover approximately 70% of the propane, 90% of the butane and 98% of the pentanes plus from the raw gas stream. These recovery levels are accomplished by chilling to -15°F with a propane refrigeration system. Chilling to lower temperatures would increase the recovery but the incremental capital investment would be much greater than the benefit derived due to the special materials of construction required. It is believed that the proposed processing scheme is the most efficient and economical one for this project.

The acid gas (carbon dioxide and hydrogen sulfide) removed from the raw gas will be burned at the top of the acid gas stack. The sulfur dioxide (SO_2) emission will be the same as if no gas conservation was undertaken. The SO_2 emission rate at the design capacity is 460 kg/d (1014 lbs/d). <

Recovery of the sulfur from this small quantity of acid gas is not economical.

3.2 Product Marketing

In so far as there is presently no market for the residue gas from the proposed plant, the potential for gas reinjection is being investigated as an extension of the existing oil reservoir pressure maintenance scheme. Some computer simulation work has been done indicating this scheme to be feasible.

Marketing of the propane and butane products presents no difficulties and preliminary discussions have been undertaken with five interested purchasers.

3.3 Product Storage

The propane product will be stored in two 111 m³ (700 barrel) bullets. Each storage bullet will be 2743 mm (108") diameter by 18.3 m (60') long.

The butane product will be stored in two (2) 40 m³ (250 barrel) bullets. Each storage bullet will be 2134 mm (84") diameter by 12.2 m (40') long.

The storage facilities will include instrumentation, loading pumps and meters. The location of the storage tanks is given on the plot plan drawing.

The condensate product will be blended with the oil from the tank battery and stored in the existing oil tanks.

The propane, butane and oil products will be shipped by tank trucks. However, proposals for an oil pipeline to Cromer, Manitoba are being formulated by interested parties.

3.4 Product Specifications

Residue gas from the plant will meet the following specifications:

- a) Hydrogen sulfide content less than or equal to 6 mg/m³.
- b) Carbon dioxide content less than or equal to 2% by volume.
- c) Maximum water content less than or equal to 64 mg/m³.
- d) Hydrocarbon dew point less than or equal to -9.4°C @ 5500 KPa (abs).
- e) Minimum gross heating value of 36.5 MJ/m³.
- f) Commercially free of sand, dust, gums, oils, impurities and other objectionable substances which may become separated from the gas and interfere with the measurement of transmission of the gas.

The propane product will meet the following GPA specification HD-5:

- a) Not less than 90% liquid volume propane.
- b) Maximum vapor pressure of 1434 KPa (208 psig) at 37.8°C (100°F).
- c) Maximum butane and heavier content of 2.5% liquid volume.
- d) Maximum of category No. 1 for copper strip corrosion test.
- e) Maximum volatile sulfur of 10 grains per 100 cubic feet.
- f) Pass on the residual matter and dryness tests.

The butane product will meet the following GPA specification:

- a) Predominantly butanes and/or butylenes.
- b) Maximum vapor pressure of 483 KPa (70 psig) at 37.8°C (100°F).
- c) Maximum pentane and heavier content of 2.0% liquid volume.
- d) Maximum of category No. 1 for copper strip corrosion test.
- e) Maximum volatile sulfur of 15 grains per 100 cubic feet.
- f) No free water present.

The stabilized condensate product will meet the following specifications:

- a) Maximum butane content of 3% by volume.
- b) Maximum vapor pressure of 83 KPa (12 psig) at 37.8°C (100°F).

3.5 Production Forecast

Although there is a high degree of uncertainty on the future anticipated raw gas volumes which depend largely on future development in the area, a reasonable forecast of these volumes is as follows:

<u>YEAR</u>	<u>OIL</u> <u>m³/d</u>	<u>Raw Gas</u> <u>10⁶m³/yr</u>	<u>APA</u>	<u>Propane</u> <u>m³/yr</u>	<u>Butane</u> <u>m³/yr</u>	<u>Condensate</u> <u>m³</u>	<u>Res. Gas</u> <u>10⁶ m³/yr</u>
1	1078	20.1	6786	8172	3625	1097	15.4
2	1111	20.7	6989	8395	3736	1130	15.9
3	907	16.9	5706	6868	3053	922	13.0
4	735	13.7	4625	5565	2480	748	10.5
5	546	11.1	3748	4499	2003	606	8.5
6	483	9.0	3043	3641	1622	491	6.9
7	386	7.2	2431	2941	1304	393	5.5
8	317	5.9	1992	2385	1065	322	4.5
9	252	4.7	1587	1924	859	256	3.6
10	204	3.8	1283	1558	700	207	2.9

What are
corresp. oil
prod rates
m³/day (BOPD)

Design Rate - $84.5 \times 10^3 \text{ m}^3/\text{d}$
 $= 30.8 \times 10^6 \text{ m}^3/\text{yr}$

% OF Design Capacity at Max = 67%

4 AIR POLLUTION

4.1 Flare Stack

The flare system consists basically of the acid gas system and the emergency vent system. When the plant is operating under normal conditions, only acid gas will be flared in the acid gas stack. Pressure relief valves, manual blowdown valves, and automatic vent valves will be tied into the vent header which will be a separate line to the blowdown stack.

The acid gas stack is 88.9 mm (3.5") O.D. x 25 m (82') high and the blowdown stack is 168.3 mm (6.625") O.D. x 25 m (82') high. These stacks will be mounted together with a common base and supported with guy wires. The stacks will be equipped with knockout pots for the removal of entrained liquids. A pilot line and ignition system will be installed on the flare stacks.

The stack effluent composition, sulfur dioxide ground level concentration and sulfur emission rate during normal and upset conditions are given in Exhibit 4.

4.2 Exhaust Gas Emission

The gas compressor will be driven by a Superior Model 8G-825 natural gas engine rated at 597 KW (800 HP). Emission details are given on the Compressor Data Sheet, Exhibit 5. The 12.2 m high exhaust stack will comply with the requirements for the dispersion of oxides of nitrogen.

The other minor source of exhaust gas emission is the natural gas engines driving the refrigerant compressors. They are a Minneapolis - Moline Model HD504A rated at 45 KW (60 HP) and a Model HD 800A rated at 86 KW (115 HP).

4.3 Hydrocarbon Vapor Emission

Hydrocarbon vapor emissions will be controlled by venting them into the closed flare system. Venting of process equipment only occurs during abnormal operating conditions such as high pressures. Potential emissions from the propane and butane storage tanks will be handled by piping the relief valves and blowdown valves into the flare system.

Vapors from the crude oil storage tanks will be collected into a common header. A study is underway to determine whether to conserve the vapors by processing them through the plant or to vent them through the flare system. *

4.4 Odour and Smoke Control

Potential odours arising from the processing of sour gas will be controlled by handling the vapor emissions through the closed flare system and burning them at the top of the 25 meter high blowdown stack. Chemicals will be stored in closed containers. As the majority of the plant equipment is housed, no problems with odours are anticipated.

Smoke will be controlled by the removal of any heavy hydrocarbons in the flare knockout pot and by minimizing the occurrences of flaring gas.

4.5 Noise Control

Potential noise from pumps, motors, and control valves will be minimized by installing the equipment inside insulated buildings. The exhaust lines from the gas compressor and propane compressor engines will be equipped with residential silencers. The plant noise will conform to the following guideline:

The maximum permissible noise level measured at a distance of 15 meters from any occupied permanent dwelling in the direction of the source shall be:

Daytime: (7:00 a.m. to 11:00 p.m.)	65 decibels (dBA)
Nighttime: (11:00 p.m. to 7:00 a.m.)	50 decibels (dBA)

4.6 Monitoring Program

Due to the low contaminant emission rates and since the plant is basically a liquids recovery facility (gas sweetening is required only to meet the liquid products specifications), it is felt that continuous ambient monitoring is not warranted.

4.7 Contaminant Emission Rate

At the plant design capacity rate, the emission rate of sulfur dioxide is 460 kg/d (1014 lbs/day). At this rate, the predicted ground level concentration of sulfur dioxide is 0.166 ppm.

The maximum emission rate of nitrogen dioxide (NO₂) from the gas compressor engine is 0.00064 m³/s. The predicted ground level concentration of NO₂ is 0.03 ppm.

5. WATER POLLUTION

5.1 Waste Water Disposal

Produced water separated from the raw gas by the plant inlet separator will be routed to the drain header. Drains from process equipment that are expected to be predominantly water will also be collected and piped to the drain header. The drain header will be connected to the existing salt water tanks. There are two 64 m³ (400 BBL) and one 48 m³ (300 BBL) fiberglass tanks.

The water from these tanks is filtered, chemically treated as required, metered and pumped into the existing water injection wells. Any accumulation of oil is allowed to separate by gravity and skimmed off.

Process drains from the amine system will be collected by a drain header into an underground amine drain tank with a capacity of 4.5 m³ (1000 gallons).

Waste lube oil from the compressor engines will be piped to an underground drain tank with a capacity of 4.5 m³ (1000 gallons).

Entrained liquids from flared vapors will be removed by knockout pots on the acid gas and blowdown systems. Any accumulation of liquid hydrocarbons will be pressured into the oil tanks.

The glycol regeneration which boils off water from the rich glycol so that it can be recycled will emit about 0.16 m³/d (50 IG/d) of water vapor to the atmosphere. The water vapor is sweet since the glycol is in contact with only the sweetened gas.

5.2 Surface Water Drainage

The plant site will be graded and contoured to divert surface runoff from the plant area to the surrounding natural watershed. The process equipment will be skid mounted inside buildings so that any accidental spills are contained and contamination of surface water is prevented. Dykes around the storage tanks will eliminate spills from reaching the watershed area.

5.3 Sewage and Wastes

No washroom facilities will be installed at the plant site eliminating the need for a sewage system. Solid wastes such as filters, papers and rags will be stored in suitable containers and disposed of at an approved site.

5.4 Processing Chemicals

Processing chemicals involved in the plant are as follows:

- a) Monoethanolamine (MEA) will be used in a 15% solution with water as the gas sweetening solvent. Losses will be mainly due to entrainment and vaporization in the contactor and regenerator. The expected consumption is about 0.0045 m³/d (1.0 IG/d).

5.4 Processing Chemicals

- b) Monoethylene glycol (EG) will be used to dehydrate the sweetened gas prior to chilling. Losses caused by entrainment in the residue gas, leaks and regeneration system upsets are estimated at $0.0037 \text{ m}^3/\text{d}$ (0.8 IG/d).
- c) Propane refrigerant will be used in a recycle system to chill the gas. This fluid will be maintained in a separate closed system although some losses occur through compression, system leaks and routine maintenance. The losses are estimated to be $0.014 \text{ m}^3/\text{d}$ (3.0 IG/d).
- d) A heating medium such as glycol or synthetic oil will be maintained in closed system with little or no loss anticipated.
- e) Used lubricating oils will be collected in the underground lube oil drain tank and pumped out periodically for subsequent disposal.
- f) Minor amounts of other chemicals such as corrosion inhibitor, antifoam, and methanol will be used as the plant operation dictates. These chemicals will be retained in the system.
- g) Demineralized water will be added to the amine system to compensate for vaporization losses in the amine regenerator. This water will be trucked from a suitable source and stored in a holding tank. Approximate consumption will be $0.45 \text{ m}^3/\text{d}$ (100 IG/d).

6. OTHER MATTERS

6.1 Startup Procedure

Proper safety measures and good operating practices will be observed during the startup of the plant. The equipment will be first purged with an inert gas such as nitrogen to expel air from the system. Then, the piping and equipment will be checked for leaks and the necessary repairs made. The proper functioning of all instruments and shutdown devices will be ensured.

The amine, glycol, refrigerant and heating medium systems will be charged with the initial fill. The engines will be filled with coolant and lube oil and their proper operation determined. Gas will be drawn from the tank battery to supply fuel gas to the plant.

The next step will be to startup the amine and glycol reboilers and to bring these solutions up to operating temperature. Circulation of these solutions through their respective systems will be established. Raw gas will then be slowly introduced into the sweetening system and initially vented through the flare system. At this time, the refrigeration compressors and fractionation reboilers will be brought on line.

As soon as the sweetening unit is producing sweet gas and the chilling and fractionation systems are at the proper operating conditions, the residue gas will be routed into the process equipment but still flared at the plant outlet. Adjustments will be made to the processing equipment until the operating conditions have stabilized and product specifications are being met. When this stage is achieved, flaring of the gas will cease and the compressed residue gas will be sent to the pipeline for reinjection.

All sour gas will be flared during startup to eliminate emissions of hydrogen sulfide. Every effort will be made to achieve a quick, efficient startup in order to minimize possible pollution problems.

6.2 Emergency Procedures

The design of the plant incorporates safety features to protect against equipment failures and abnormal operating conditions. During an emergency situation, the plant would be automatically shutdown and isolated by emergency shutdown valves. Conditions activating a shutdown would be fire detection, gas detection, high residue gas H₂S content, certain high pressures and temperatures and equipment failures. The raw gas from the battery would be automatically routed to the blowdown stack during a shutdown. The venting of gas contained in the plant process equipment to the blowdown stack only occurs during a fire detection, high gas detection or manual shutdown situation.

An emergency would be restricted to the plant site and all necessary precautions including a fence around the plant boundary with posted signs will be taken to ensure that public safety is not in jeopardy.

6.3 Measurement

The proposed meters to be employed for product measurement and plant balance are given on the process flowsheets, Drawing Nos. D-8314-L-01, 02, and 03. A tabulation of these meters is as follows:

<u>Meter Number</u>	<u>Description</u>
FR 1	Inlet Gas
FR 2	Acid Gas to Flare
FR 3	Plant Fuel Gas
M 4	Propane Product
M 5	Butane Product
M 6	Condensate Product
FR 7	Reinjection Gas
M 8	Propane Loading
M 9	Butane Loading
FR 10	Flare Gas

6.4 Distribution of Royalty Income

In anticipation of the possibility of a gas reinjection scheme and to simplify the overall accounting procedure, Omega would propose to purchase the raw gas intended for processing at the plant inlet. Mineral interest owners then would be paid according to the revenue from the sale of the raw gas. Omega would obtain full value for the liquids sold and would have royalty-free custody of the residue gas. 7

Negotiations are in progress with the other working interest owners regarding the pricing of the raw gas and once agreed to, all raw gas will be purchased for the same price. *

6.5 Corrosion

Corrosion is not a serious concern with this plant since the raw gas H_2S content is only 0.20%. Since the gas is sweetened first, the majority of the plant equipment will be processing sweet gas.

However, special attention will be paid to vessels, piping and other equipment in sour service (i.e., in contact with the raw sour gas or acid gas). A corrosion allowance of 3.18 mm (1/8") will be added to the wall thickness of pressure vessels in sour service. Stress relief of sour service vessels including the inlet separator, amine contactor and amine regenerator as well as the welded amine piping will be required. Monitoring of internal corrosion rates will be accomplished by employing corrosion coupons. These coupons will be installed in strategic locations and analyzed on a regular basis.

Corrosion inhibitor will be injected in the amine system to minimize metal losses although no serious problems are anticipated. Tests will be conducted on the amine and glycol systems and additives will be injected as required to maintain the quality of the solutions so that the incidence of corrosion is avoided. In addition, filters will be installed on the amine and glycol lines to remove particulate and foreign substances. Corrosion in the sweet gas system is not anticipated to be a problem.

All underground lines will be steel pipe protected by an external coating of polyethylene which will minimize the risk of soil corrosion.

6.6 Economics

There remains a large degree of uncertainty with respect to future anticipated raw gas volumes and the resulting economics of the proposed plant. Factors contributing to this uncertainty are:

- a) the success or failure of future drilling in the area by Omega.
- b) individual well performance both under primary and/or secondary recovery.
- c) volatility of LPG markets.
- d) raw gas contributions from other operators
- e) possible effects of gas reinjection and subsequent recycling.

Whereas Omega remains confident of the area's long term potential both in sustaining established production and in potential additions, based on present volumes of $42 \cdot 10^3 m^3/d$ (1.5 MMCFD) of raw gas almost 4 years are required to payout the estimated 2.6 million dollar plant costs. ?

6.7 Surface Lease for Plant Site

Omega has made preliminary contacts with Mr. Gordon Trewin regarding acquiring a surface lease for the plant site adjacent to the existing battery as indicated by the plot plan. Mr. Trewin is agreeable to our proposal and a formal agreement will proceed as soon as Omega has some assurance that our plant proposal will be approved by the Manitoba government.

6.8 Gas Conservation from Other Batteries

The proposed gas plant has been designed for $84.5 \times 10^3 \text{ m}^3/\text{d}$ (3.0 MMCFD) of raw gas which should allow for the processing of approximately twice the volume of gas currently available at the 11-30 battery. Within our capacity limitations Omega would certainly wish to entertain purchase of outside operated raw gas provided suitable agreements can be negotiated.

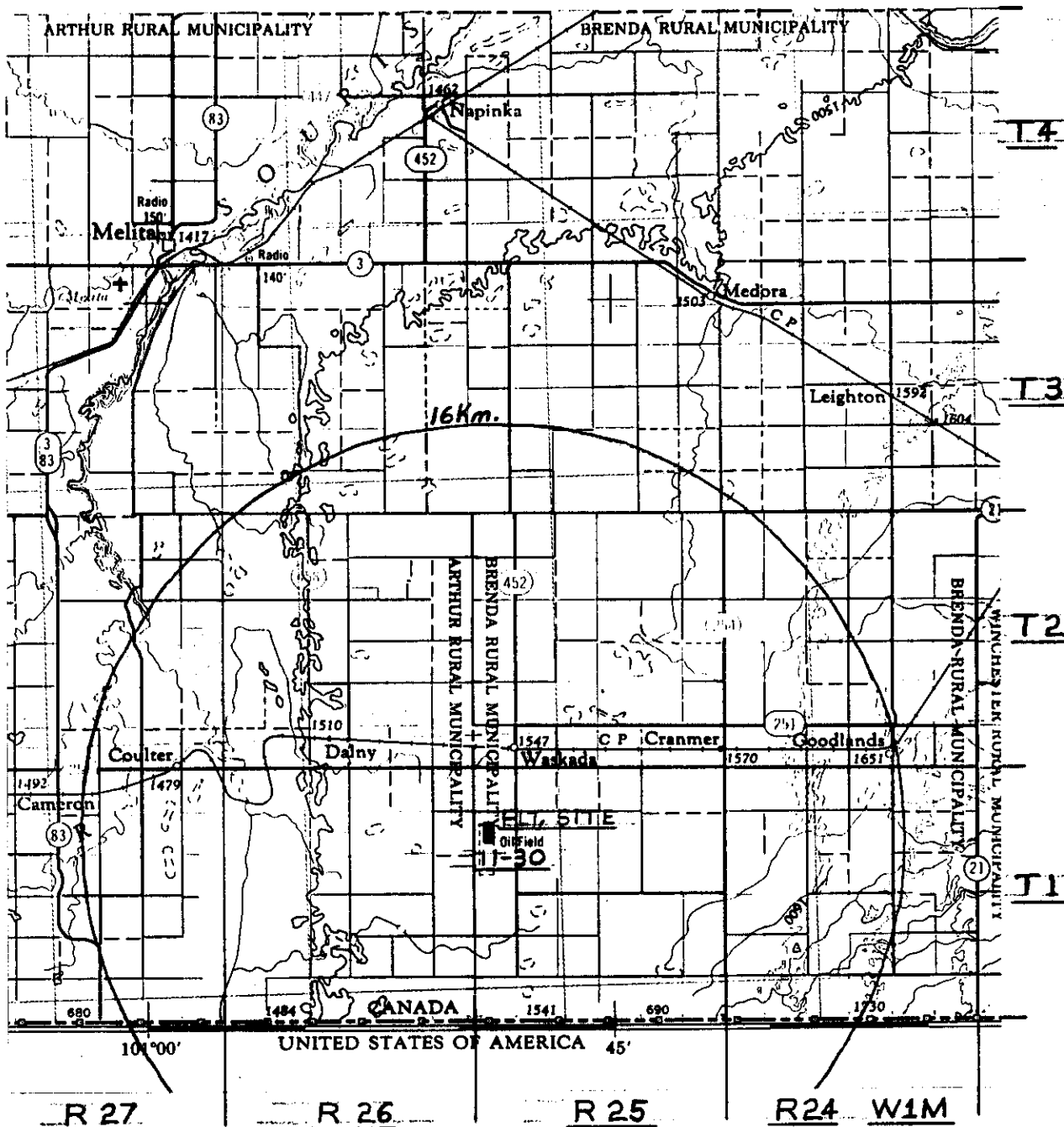
EXHIBITS

OMEGA HYDROCARBONS LTD.

WASKADA PLANT

LIST OF ATTACHMENTS

Exhibit 1 Map 1	Topographical Map (Scale 1:250,000)
Exhibit 1 Map 2	Topographical Map (Scale 1:50,000)
Exhibit 2	Plant Process Description
Exhibit 3	Plant Material Balance
Exhibit 4	Flare Stack Data
Exhibit 5	Compressor Data Sheet
Drawing D-8314-L-01	Site Plan
Drawing D-8314-F-01	Process Flowsheet Sheet 1
Drawing D-8314-F-02	Process Flowsheet Sheet 2
Drawing D-8314-F-03	Process Flowsheet Sheet 3



SWINARTON ENGINEERING LTD.

CALGARY

ALBERTA

OMEGA HYDROCARBONS LTD.

WASKADA GAS PLANT

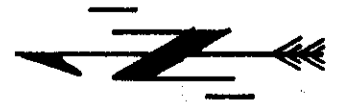
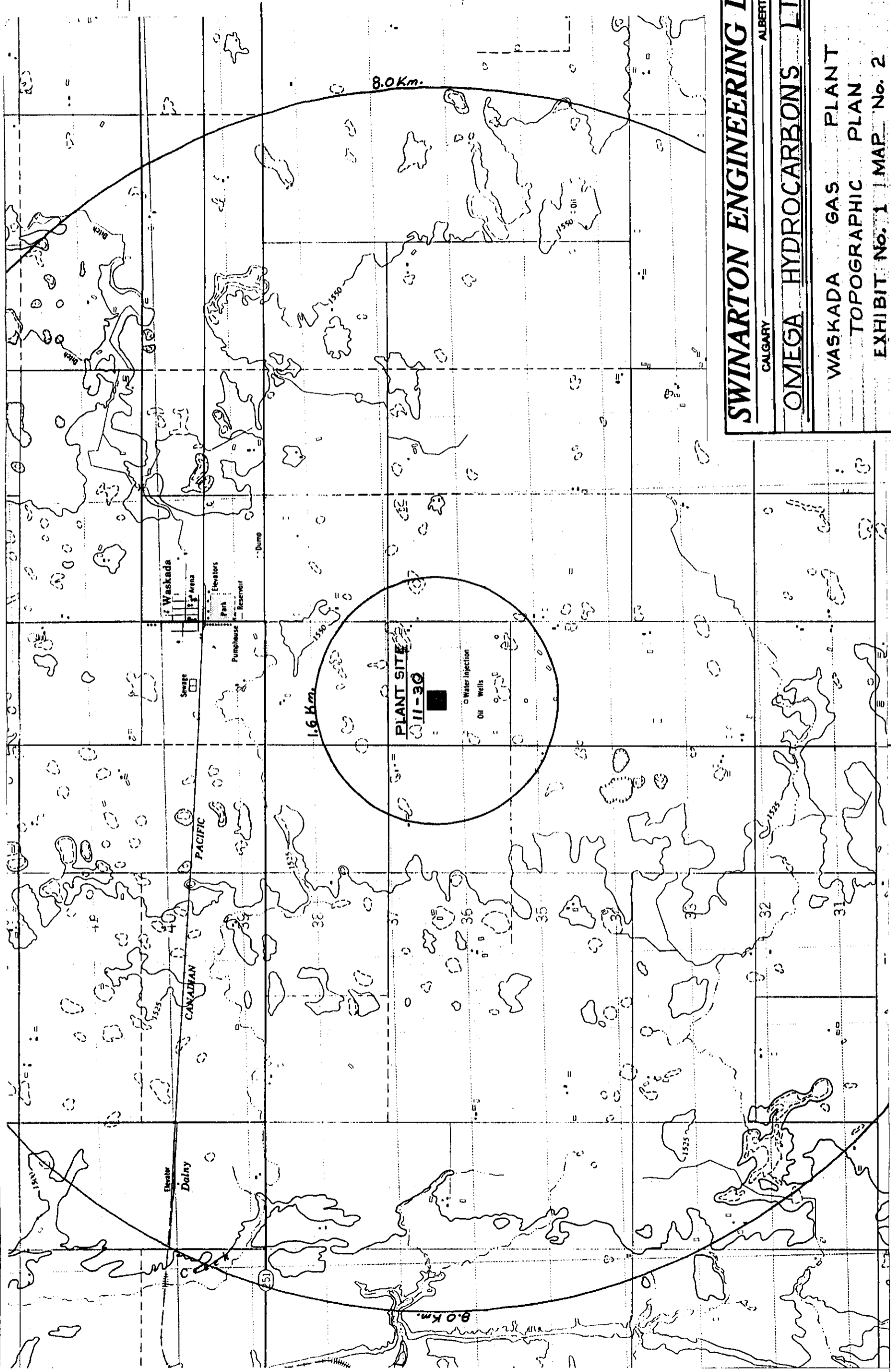
TOPOGRAPHIC MAP

EXHIBIT No. 1 MAP No. 1

DESIGNED BY K.E.R.	DATE 21-05-12	PROJECT 21-129	DWG. No. A-129-P03	REV.
CHECK'D BY	APPRO'D BY	SCALE 1:250000		

DWG. No.

REFERENCE DRAWINGS



SWINARTON ENGINEERING LTD.	
CALGARY	ALBERTA
OMEGA HYDROCARBONS LTD.	
WASKADA GAS PLANT	
TOPOGRAPHIC PLAN	
EXHIBIT No. 1 MAP No. 2	
DRWN. BY A.E.P.	DATE 83-05-12
CHK'D. BY	APPD BY
PROJECT B-129	SCALE 1:50000
DRWG No. B-129-P04	REV.

R 25 WIM

R 26

OMEGA HYDROCARBONS LTD.

WASKADA PLANT

PROCESS DESCRIPTION

EXHIBIT 2

INLET COMPRESSION

The plant inlet fluid which is treater gas from the existing tank battery enters the first stage suction scrubber of the gas compressor at a design rate of 3.0 MMSCFD and at operating conditions of 70°F and 40 psia. The inlet gas is measured by an orifice meter and the suction pressure maintained by a pressure control valve. If the plant is shutdown or reinjection gas is not required, the gas is sent to the blowdown stack through the flare header after it has been measured.

The first stage suction scrubber allows the separation of any water in the inlet fluid. The water is drained to the existing water storage tanks. Normally, no free water will be present in the inlet fluid.

The gas is compressed by the first stage cylinder to 150 psia, then cooled before entering the second stage suction scrubber. Again, the scrubber separates any liquid dropping out from compression.

The gas is compressed to 500 psia by the second stage cylinder and cooled to 120°F in the aerial cooler. The raw gas is now at the proper pressure for processing through the sweetening and liquid recovery facilities.

The gas compressor will include the third stage for reinjection. The driver will be an 800 HP natural gas engine using residue gas as fuel.

GAS SWEETENING

The compressed gas at 500 psia enters the inlet separator which allows three phase separation of gas, hydrocarbon liquids and water. The hydrocarbon liquids will be routed to the oil storage tanks and the water to the water storage tanks. The gas stream flows to the amine contactor where it is contacted countercurrently with a 15% solution of monoethanolamine (MEA). The solution removes carbon dioxide (CO₂) and hydrogen sulfide (H₂S) from the sour gas stream by chemical reaction. The tower is filled with packing to provide the surface area for the chemical reaction to occur.

The gas leaving the top of the tower is stripped of the CO₂ and H₂S and then flows to the chilling section of the plant.

The rich MEA laden with the removed CO₂ and H₂S is level controlled through the amine/amine heat exchanger and into the amine still. The amine still contains an integral condenser mounted vertically on the top of the tower. This arrangement provides total reflux to conserve water losses. From the condenser section the rich amine is directed to the packed bed of the still where it is countercurrently contacted with steam generated by the amine reboiler. The application of this heat to the rich amine reverses the chemical reaction, with the acid gas (CO₂ and H₂S) leaving the top of the still in vapor form. The still and reboiler are

operated at 20 psia. The acid gas flows to the acid gas stack where it is burned so that H_2S is converted to sulfur dioxide (SO_2).

The lean amine is pumped through the amine/amine exchanger where it is cooled prior to being recycled back to the top of the contactor.

Other equipment supplied for the amine regeneration system are a cartridge filter, charcoal filter and chemical injection.

GAS CHILLING

The purpose of the gas chilling section of the plant is to cool the incoming gas stream from $120^{\circ}F$ to $-15^{\circ}F$ for the recovery of liquid hydrocarbons. The sweetened gas is first cooled by heat exchange with the cold residue gas and cold liquids from the low temperature separator. The intermediate separator flashes the gas from the liquid phase. This intermediate removal of liquids reduces the chilling load of the gas chiller.

The gas chiller performs the final stage of cooling the gas from $51^{\circ}F$ to $-15^{\circ}F$. The chiller is a kettle type heat exchanger with gas flowing on the tube side and propane refrigerant on the shell side. Liquid propane is evaporated at a temperature of $-25^{\circ}F$ with the resulting vapor flowing to the separate refrigerant recycle system. Ethylene glycol (EG) is injected onto the tubes of the exchangers and the chiller at a rate of 0.5 USGPM to prevent hydrate formation.

The chilled fluid, consisting of residue gas, hydrocarbon liquid and glycol-water mixture, next enters the horizontal 3 phase low temperature separator. The glycol-water solution forms the lower liquid phase in the "boot" of the vessel and is level controlled to the glycol regeneration system where the excess water is stripped and the lean glycol returned for injection. The hydrocarbon liquid is combined with the liquids from the intermediate separator to form the feedstock for the fractionation portion of the plant. The residue gas after being heated in the exchanger mentioned above is available for reinjection. The design volume of residue gas is 1.892 MMSCFD.

FRACTIONATION

The fractionation section of the plant produces separate propane, butane and condensate products from the liquids extracted from the raw gas. The hydrocarbon liquids are fed into the deethanizer which is a packed distillation tower designed to recover 91% of the propane in the feed. The overhead vapor from the deethanizer is chilled to $25^{\circ}F$ and the condensed liquid is used as reflux. A portion of vapor stream from the reflux drum is used to fuel the fired heaters and the tank battery treaters. The remainder is available to be combined with the residue gas for reinjection. The deethanizer operates at 430 psia.

The deethanizer bottoms are cooled prior to entering the depropanizer tower which is also a packed column. This typical distillation tower complete with overhead condenser, reflux drum, reflux pump and reboiler produces propane as the overhead product at a rate of 200 BPD at an operating pressure of 264 psia.

The depropanizer bottoms are fed to the final packed distillation tower, the debutanizer, which operates at 100 psia. The overhead product is butane produced at a rate of 85 BPD and the bottom product is condensate at a rate of 29 BPD.

The propane and butane products are stored in separate pressurized vessels and shipped by tank truck. The condensate product is blended with the crude oil in the existing oil storage tanks.

REINJECTION

After the residue gas and deethanizer overhead vapor are combined, the mixture flows to the third stage of the gas compressor where the pressure is boosted to 1500 psia. Fuel gas for the gas compressor and refrigerant compressor engines is drawn from the residue gas. The resulting total gas volume available for reinjection is 2.302 MMSCFD. The reinjection gas will be sent to various gas injection wells as part of the oil reservoir pressure maintenance scheme through a high pressure gas pipeline system.

REFRIGERATION

The propane refrigerant vaporized in the gas chiller passes through the propane suction scrubber and into the low stage propane compressor. The compressor is a packaged unit with a capacity of 38.2 tons of refrigeration and 108 BHP. Upon discharging from the compressor, the vapor is condensed at a temperature of 105°F and 210 psia. The liquid propane flows to the propane receiver which provides storage capacity. From the receiver the liquid propane is level controlled to the gas chiller to complete the cycle.

An identical system is used for the deethanizer overhead condenser. This high stage propane compressor has a capacity of 37.4 tons of refrigeration and 54 BHP. The propane vapor enters the compressor at a temperature of 20°F.

The two systems will have separate suction scrubbers and compressors but share the common condenser and receiver.

OMEGA HYDROCARBONS LTD.
WASKADA GAS PLANT
MATERIAL BALANCE
EXHIBIT 3

STREAM			FEED		SWEETENED GAS		LTS VAPOR		LTS LIQUID		DEETH. OV HD		DEETH. BOTTOMS		PROPANE PRODUCT		DEPROP. BOTTOMS		BUTANE PRODUCT	
			1		2		3		4		5		6		7		8		9	
U.S. GAL / MOL	MW	COMP.	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %	MOLS	MOL %
1	4.16	N2	29.49	8.98	29.49	9.02	27.79	13.42	1.70	1.42	1.70	2.44	—	—	—	—	—	—	—	
2	6.38	CO2	0.79	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3	5.17	H2S	0.66	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
4	6.40	C1	159.34	48.53	159.34	48.75	134.87	65.15	24.47	20.42	24.47	35.15	—	—	—	—	—	—	—	
5	10.12	C2	74.31	22.63	74.31	22.73	34.87	16.84	39.44	32.91	39.01	56.08	0.43	0.86	0.43	1.27	—	—	—	
6	10.42	C3	45.77	13.94	45.77	14.00	8.56	4.13	37.21	31.05	3.72	5.35	33.49	66.59	33.16	97.55	0.33	2.02	0.33	
7	12.38	IC4	4.40	1.34	4.40	1.35	0.35	0.17	4.05	3.38	0.20	0.29	3.85	7.66	0.15	0.44	3.70	22.70	3.66	
8	11.93	NC4	2.78	0.85	2.78	0.89	0.55	0.27	9.23	7.70	0.46	0.66	8.77	17.44	0.25	0.74	8.52	52.27	8.35	
9	13.85	IC5	1.51	0.46	1.51	0.46	0.03	0.01	1.48	1.23	—	—	1.48	2.94	—	—	1.48	9.08	0.08	
10	13.71	NC5	1.58	0.48	1.58	0.48	0.03	0.01	1.55	1.29	—	—	1.55	3.08	—	—	1.55	9.51	0.06	
11	15.59	C6	0.49	0.15	0.49	0.15	—	—	0.49	0.41	—	—	0.49	0.97	—	—	0.49	3.01	—	
12	17.46	C7+	0.23	0.07	0.23	0.07	—	—	0.23	0.19	—	—	0.23	0.46	—	—	0.23	1.41	—	
13																				
14																				
15																				
TOTAL			328.35	100.00	326.90	100.00	207.05	100.00	119.85	100.00	69.56	100.00	50.29	100.00	33.99	100.00	16.30	100.00	12.48	100.00
POUNDS PER DAY																				
POUNDS PER HOUR									4339				2507		1493		1004		721	
AVERAGE MOL. WT.				26.8		26.74		21.57		36.18		26.04		49.81		43.97		61.92		57.78
GAS SP. GR. (AIR = 1)																				
N VALUE AT 150° F																				
VOLUME : MSCFD				3000		2987		1892				636								
: USGPD																				
: USGPM																				
: BPD																				
POUNDS PER U.S. GAL.																				
LIQUID SP. GR. 60° / 60°																				
C6+ / C7+ MW																				
TEMPERATURE IN ° F				70		120		-15		-15		25		220		120		292		120
PRESSURE PSIA				40		500		485		485		420		425		264		175		95

NOTE:
 1. Material Balance in Mols per hour.
 2. Gas Volume at 14.65 PSIA and 60° F.
 3. 1 Mol = 380.687 SCF.

CONDENSATE PRODUCT	REINJECTION GAS	ACID GAS		PLANT FUEL GAS	
		①	②	③	
MOLS	MOL %	MOLS	MOL %	MOLS	MOL %
—	—	27.09	10 75	—	2.40 9 74
—	—	—	—	0.79	54 48
—	—	—	—	0.66	45 52
—	—	145.74	57 84	—	13.60 55 22
—	—	66.51	26 39	—	7.37 29 92
—	—	11.16	4 43	—	1.12 4 55
0.04	1 05	0.50	0 20	—	0.05 0 20
0.71	4 45	0.92	0 37	—	0.09 0 37
1.40	36 65	0.03	0 01	—	—
1.49	39 00	0.03	0 01	—	—
0.49	12 83	—	—	—	—
0.23	6 02	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
3.82	100.00	251.98	100.00	1.45	100.00
283					
75.87		22.54		39.49	22.92
		2302		13	225
29					
110		120		120	80
100		1500		20	150

OMEGA HYDROCARBONS LTD.

WASKADA PLANT

FLARE STACK DATA SHEET

EXHIBIT 4

	<u>Acid Gas Stack</u>	<u>Blowdown Stack</u>
1. Flare Stack Diameter, mm id	78	154
2. Flare Stack Height, m	25	25
3. Flare Stack Elevation at Base, m	465	465
4. Flare Gas Composition (see Exhibit 3)	Stream 12	Stream 1
5. Flare Gas Flow, m ³ /d	373	84,522
6. Flare Gas Heat Content, MJ/m ³	10.1	49.1
7. Flare Gas Exit Velocity, m/s	7.0	52.5
8. Flare Gas Temperature, °C	35	20
9. SO ₂ Ground Level Concentration, ppm	0.166	.002
10. Sulfur Emission Rate tonne/d	0.23	0.23

Note: Supplemental Flare Stack Calculations are included as a supplement following this page.

EXHIBIT 4 - SUPPLEMENT

OMEGA HYDROCARBONS LTD.

WASKADA PLANT

FLARE STACK

COMPUTER OUTPUT LISTINGS

OMEGA WASKADA ACID GAS FLARE

PARAMETERS FOR FLARE 1

FLARE HEIGHT = 12.2 M
 FLARE GAS FLOW RATE = .0043 M³/S AT REFERENCE TEMPERATURE AND 101.325 KPA
 REFERENCE TEMPERATURE = 15.0 C
 FRACTION METHANE = .000
 FRACTION ETHANE = .000
 FRACTION PROPANE = .000
 FRACTION BUTANE = .000
 FRACTION PENTANES PLUS = .000
 FRACTION HYDROGEN SULPHIDE = .455
 FLARE DISTANCE = 0. M FROM ORIGIN
 EMISSION RATE = .0020 M³/S AT REFERENCE TEMPERATURE AND 101.325 KPA
 HEAT VALUE OF FLARE GASES = 10.11 MJ/M³ AT 15.6 C AND 101.325 KPA

AMBIENT TEMPERATURE = 20. C

DIFFUSION WITHIN A MIXING LAYER BENEATH AN ELEVATED INVERSION
 INVERSION BASE AT LEVEL OF HIGHEST PLUME OR 100. M, WHICHEVER IS LARGER

TEN-METRE WINDSPEEDS BETWEEN 1.0 AND 20.0 M/S IN INCREMENTS OF .5 M/S ARE EXAMINED

FLAT, ROUGH TERRAIN

SEARCH IS PERFORMED USING EQUAL LOGARITHMIC INCREMENTS OF DISTANCE)

OVERALL MAXIMUM GROUND LEVEL CONCENTRATION = .650 PPM AS A 1.00 HOUR AVERAGE
 DISTANCE OF OCCURENCE = 120. M
 CRITICAL TEN-METRE WINDSPEED = 1.0 M/S

MAXIMUM PERMISSABLE CONCENTRATION = .170 PPM AS A 1.00 HOUR AVERAGE

FLARE NUMBER	EFFECTIVE FLARE HEIGHT (M)	CONTRIBUTION TO OVERALL MAXIMUM (PPM)
--------------	----------------------------	---------------------------------------

1	18.	.650
---	-----	------

**** TALLER FLARE(S) NECESSARY ****

FLARE NUMBER	REQUIRED FLARE HEIGHT (M)	EFFECTIVE FLARE HEIGHT (M)	CONTRIBUTION TO OVERALL MAXIMUM (PPM)
--------------	---------------------------	----------------------------	---------------------------------------

1	25.	30.	.166
---	-----	-----	------

DISTANCE TO MAXIMUM = 251. M

CRITICAL TEN-METRE WINDSPEED = 1.0 M/S

OMEGA WASKADA EMERGENCY FLARE

PARAMETERS FOR FLARE 1

FLARE HEIGHT = 25.0 M
 FLARE GAS FLOW RATE = .9783 M³/S AT REFERENCE TEMPERATURE AND 101.325 KPA
 REFERENCE TEMPERATURE = 15.0 C
 FRACTION METHANE = .485
 FRACTION ETHANE = .226
 FRACTION PROPANE = .139
 FRACTION BUTANE = .043
 FRACTION PENTANES PLUS = .009
 FRACTION HYDROGEN SULPHIDE = .002
 FLARE DISTANCE = 0. M FROM ORIGIN
 EMISSION RATE = .0020 M³/S AT REFERENCE TEMPERATURE AND 101.325 KPA
 HEAT VALUE OF FLARE GASES = 49.07 MJ/M³ AT 15.6 C AND 101.325 KPA

AMBIENT TEMPERATURE = 20. C

DIFFUSION WITHIN A MIXING LAYER BENEATH AN ELEVATED INVERSION
 INVERSION BASE AT LEVEL OF HIGHEST PLUME OR 100. M, WHICHEVER IS LARGER

TEN-METRE WINDSPEEDS BETWEEN 1.0 AND 20.0 M/S IN INCREMENTS OF .5 M/S ARE EXAMINED

FLAT, ROUGH TERRAIN
 (SEARCH IS PERFORMED USING EQUAL LOGARITHMIC INCREMENTS OF DISTANCE)

OVERALL MAXIMUM GROUND LEVEL CONCENTRATION = .002 PPM AS A 1.00 HOUR AVERAGE
 DISTANCE OF OCCURENCE = 1445. M
 CRITICAL TEN-METRE WINDSPEED = 9.5 M/S

MAXIMUM PERMISSABLE CONCENTRATION = .170 PPM AS A 1.00 HOUR AVERAGE

FLARE NUMBER	EFFECTIVE FLARE HEIGHT (M)	CONTRIBUTION TO OVERALL MAXIMUM (PPM)
1	99.	.002

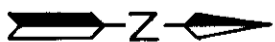
Omega Hydrocarbons Ltd.

Waskada Plant

Compressor Data Sheet

Exhibit 5

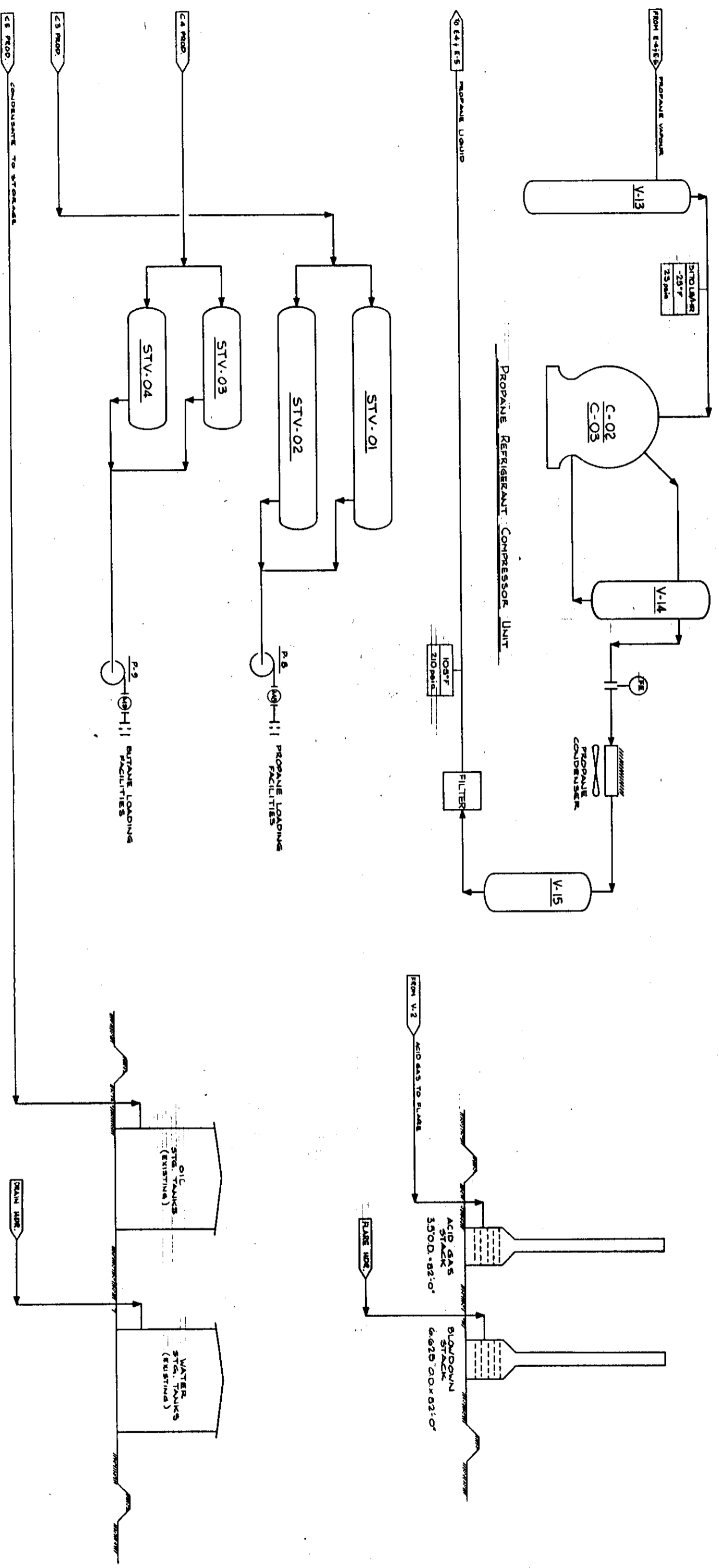
<u>Description</u>	<u>Unit #1</u>
1. Compressor Engine Detail:	
Make	Superior
Model	8G-825
Available KW	597
Maximum speed (RPM)	900
Exhaust Gas at Maximum Speed:	
Flow rate (Kg/hr)	2864
Temperature (°C)	720
Exit velocity (m/s)	31
NO _x rate (g/kw-hr)	19.0
Co rate (g/kw-hr)	7.8
Hydrocarbon rate (g/kw-hr)	1.8
Exhaust Stack:	
Orientation	vertical
Inside diameter (mm)	266.7
Height (m)	12.2
2. Other Details:	
Compressor Building peak height (m)	6.7
Tree canopy height (m)	N/A



2-82-6

V-13
PROANE Suction Scrubber
C-02.03
PROANE COMPRESSORS
V-14
OIL SEPARATOR
V-15
PROANE RECEIVER
STV-01
PROANE STORAGE VESSEL
STV-02
PROANE STORAGE VESSEL

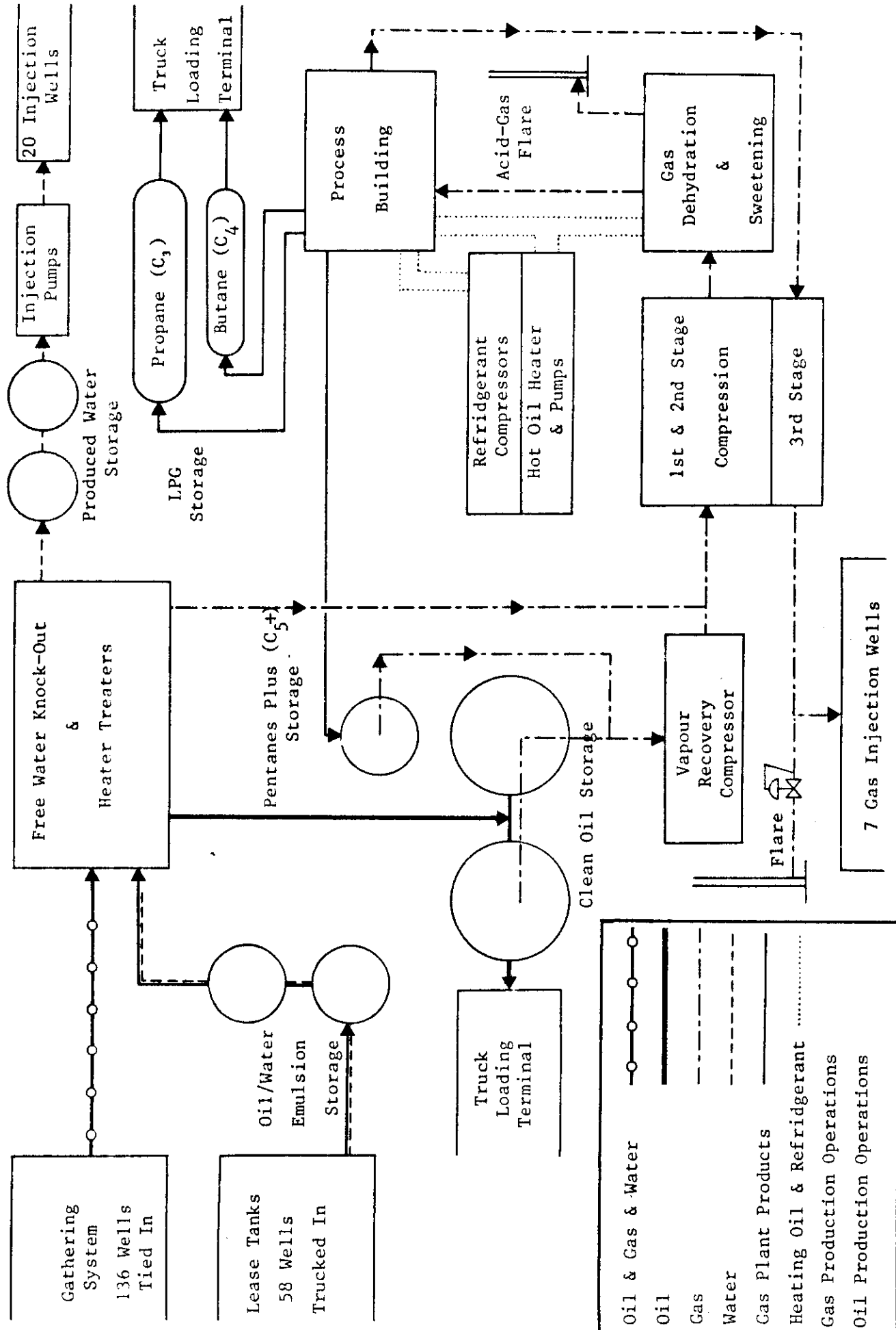
STV-03
BUTANE STORAGE VESSEL
250 BARREL CAPACITY
STV-04
BUTANE STORAGE VESSEL
250 BARREL CAPACITY



SWINARTON ENGINEERING LTD.		CALGARY ALBERTA	
OMEGA HYDROCARBON LTD.		WASKADA GAS PLANT	
PROCESS FLOW SCHEMATIC		SHEET 3 OF 3	
DATE 03-04-07		DRAWN BY KLM/COM/07	
DATE 03-04-07		CHECKED FOR APPROVAL	
DATE 03-04-07		BY	
DATE 03-04-07		REVISION	
DATE 03-04-07		PROJECT	
DATE 03-04-07		SCALE	
DATE 03-04-07		D-0314-F-03	

OMEGA HYDROCARBONS LTD.

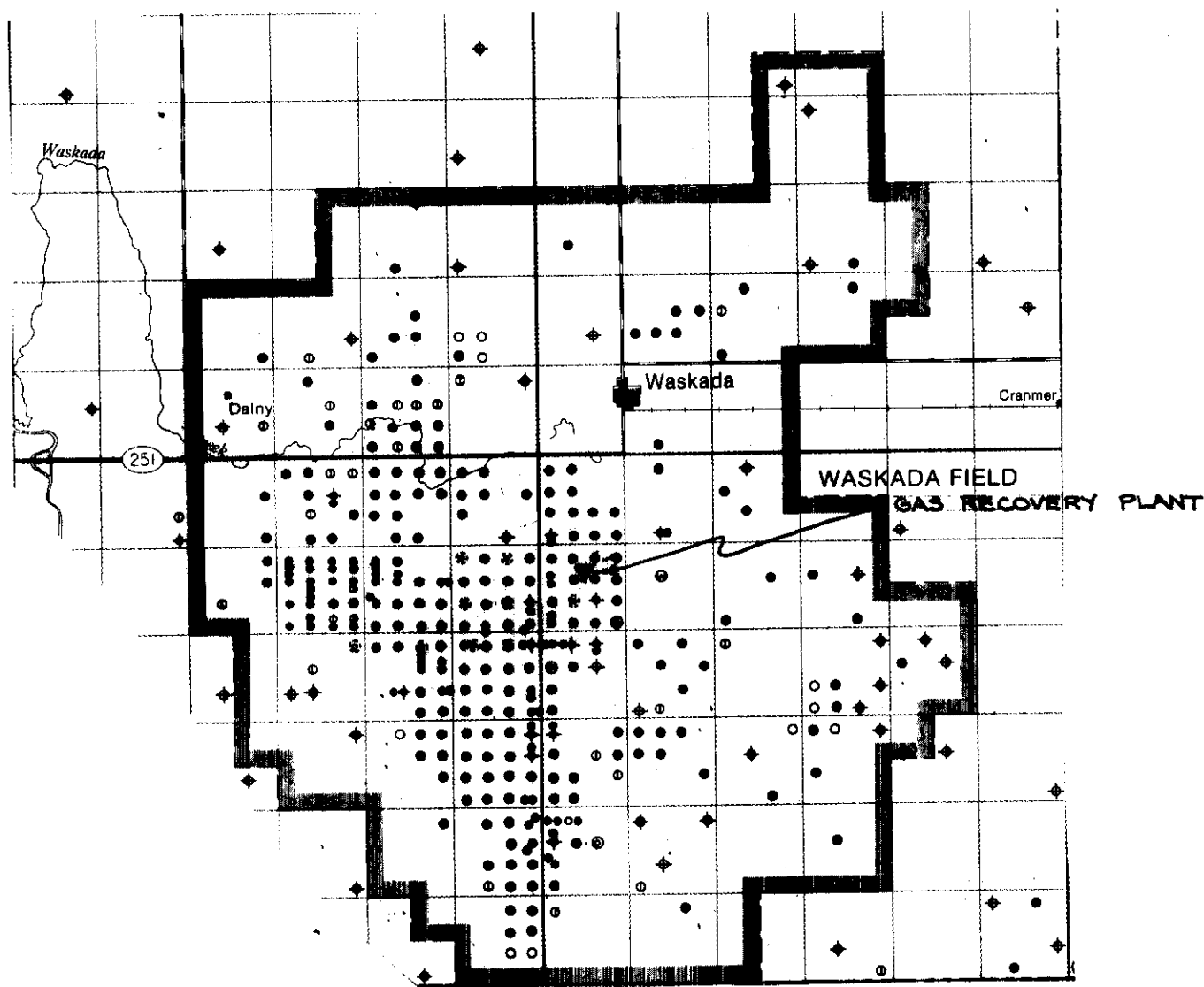
WASKADA 11-30-1-25 WPM OIL BATTERY AND GAS PLANT SCHEMATIC



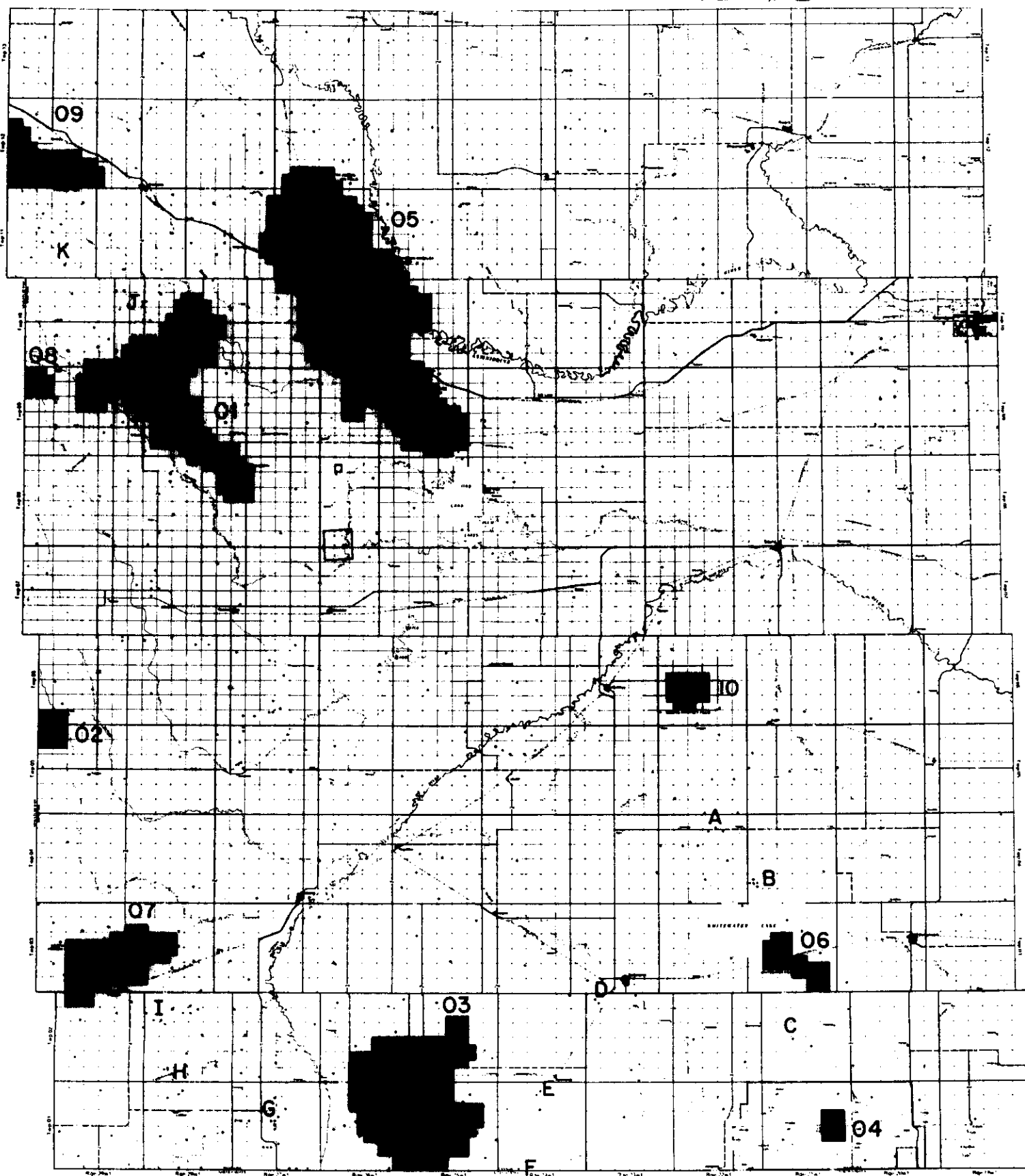
Please file ORIGINAL copy for
possible future re-runs. This
job was printed from plates
which cannot be re-used.

MANITOBA PETROLEUM BRANCH

WELL LOCATION MAP



MANITOBA OIL FIELDS



Fields

01	Daly	06	Whitewater
02	Tilston	07	Pierson
03	Waskada	08	West Butler
04	Lulu Lake	09	Kirkella
05	Virden	10	Souris Hartney

Other Areas (pools)

A.	W. Regent	F.	S. Goodlands
B.	Regent	G.	Coulter
C.	Mountainside	H.	Lyleton
D.	Deloraine	I.	S. Pierson
E.	Goodlands	J.	West Daly
		K.	S. Kirkella

MANITOBA PETROLEUM BRANCH

CAS PRODUCTION

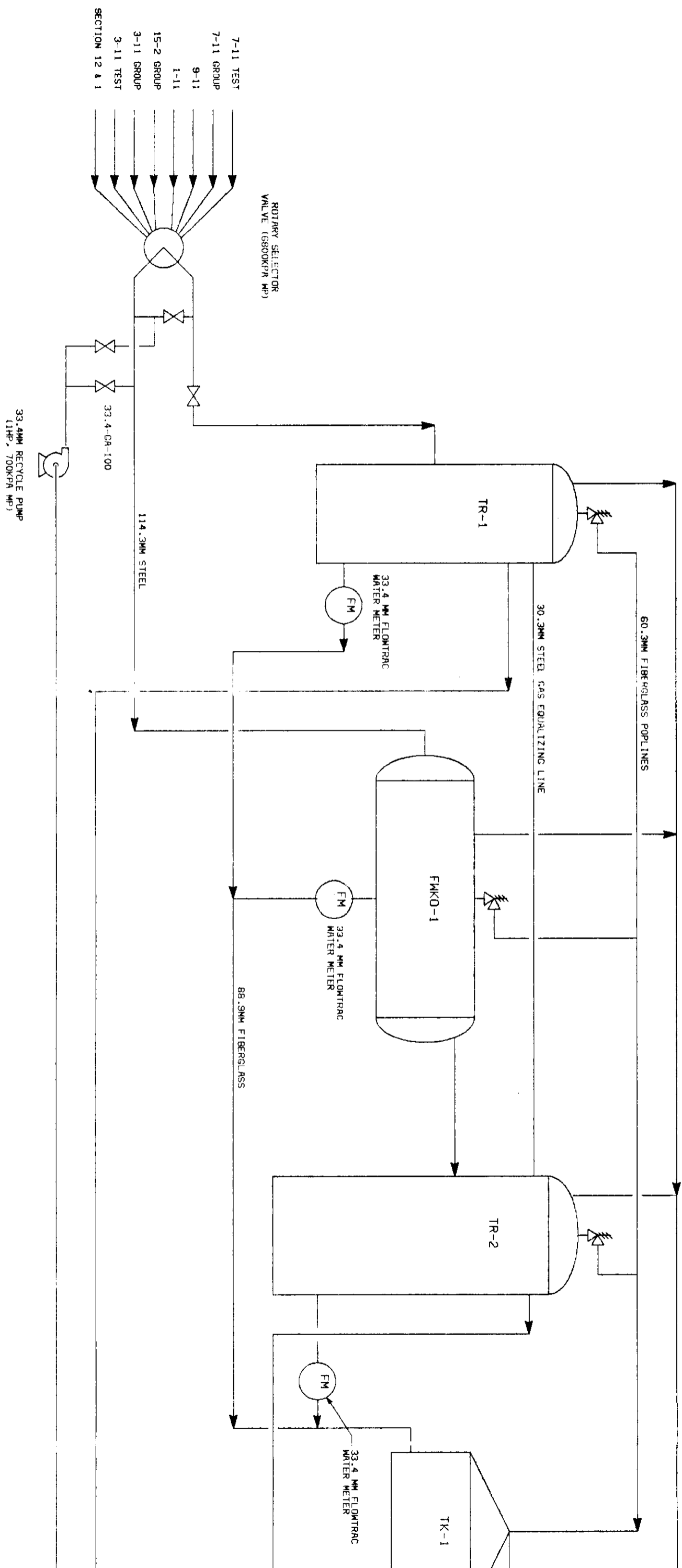
[illegible]

TR-1
BS-B TEST TREATER
1.8M X 6.4M
OPERATING CONDITIONS 60°C, 100KPA
PRESSURE RELIEF SET AT 175KPA

FWKO-1
MC HORIZONTAL KNOCKOUT
1.8M X 7.0M
OPERATING CONDITIONS 5°C, 250KPA

TR-2
NATIONAL PRODUCTION TREATER
1.8M X 8.2M
OPERATING CONDITIONS 60°C, 100KPA
PRESSURE RELIEF SET AT 175KPA

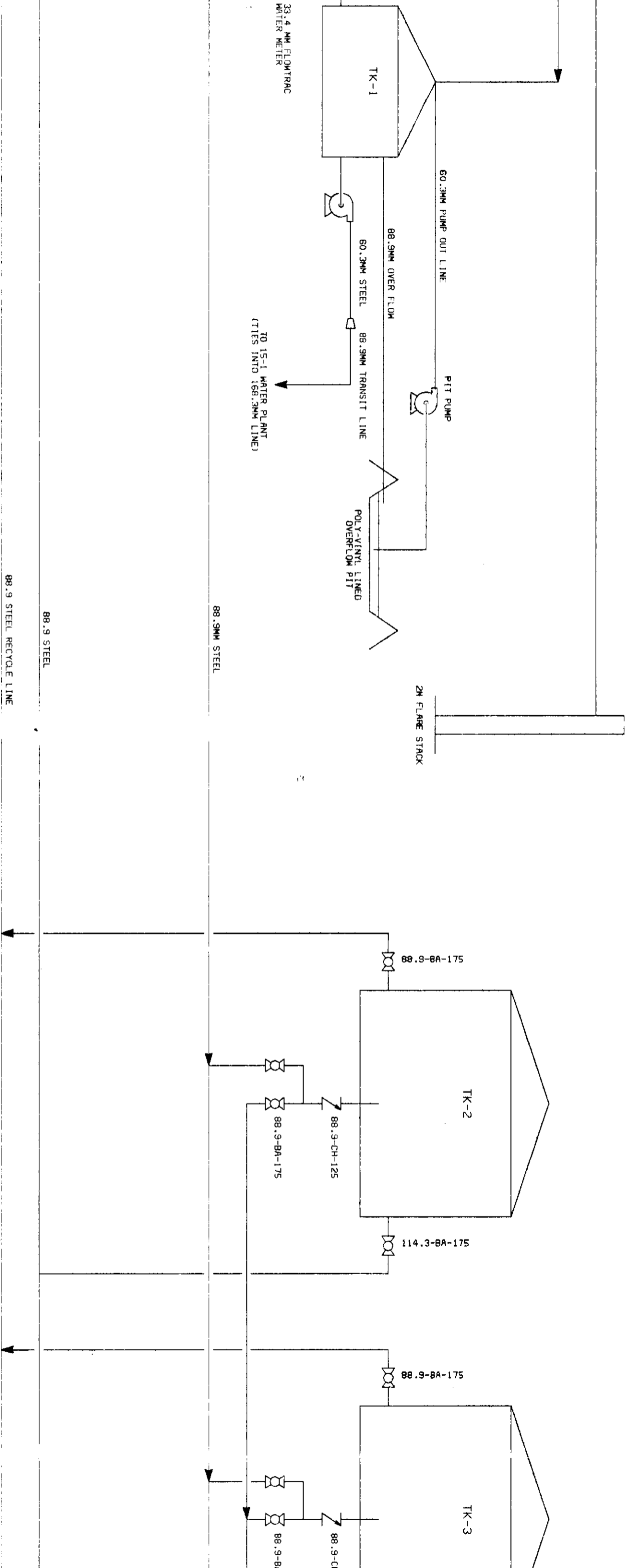
TK-1
REDWOOD WATER
CAPACITY 16



TK-1
REDWOOD WATER TANK
CAPACITY 16M³

TK-2
BOLTED STEEL PRODUCTION TANK
CAPACITY 80M³

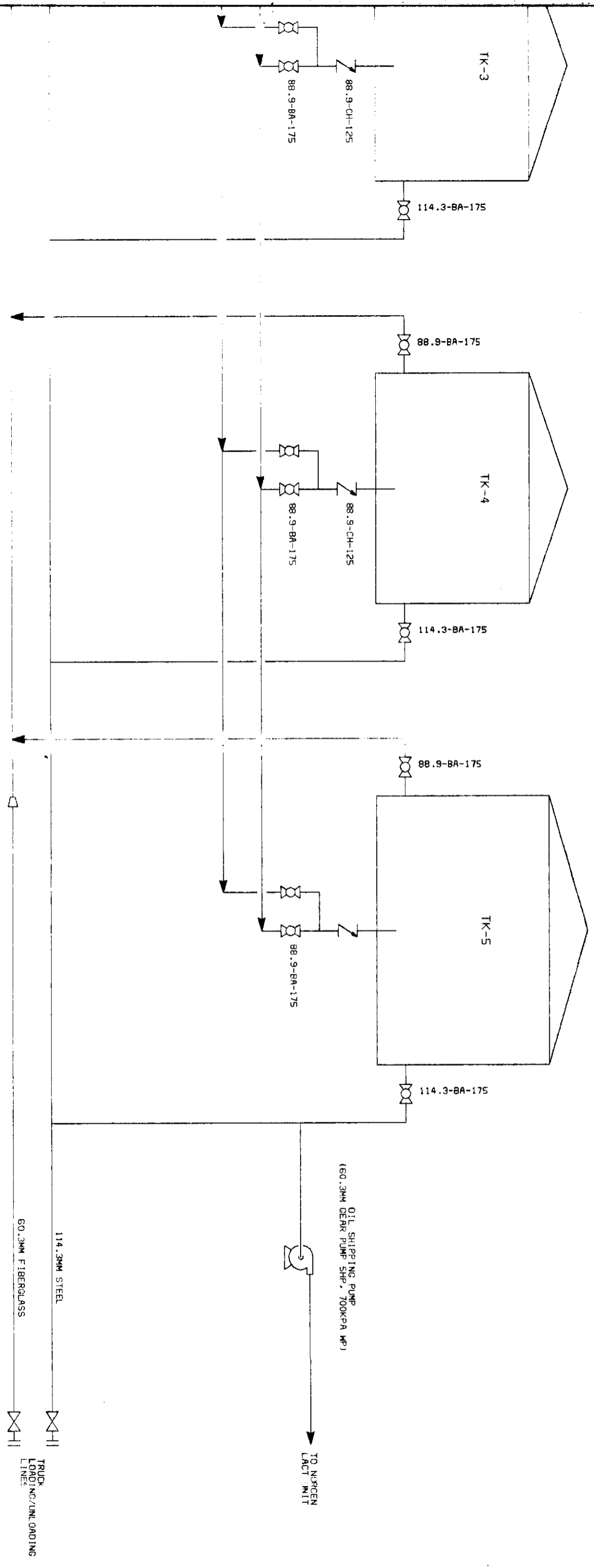
TK-3
BOLTED STEEL PRODUCTION TANK
CAPACITY 80M³



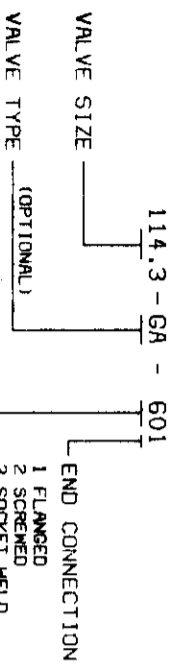
TK-3
STEEL PRODUCTION TANK
CAPACITY 80M³

TK-4
BOLTED STEEL PRODUCTION TANK
CAPACITY 80M³

TK-5
BOLTED STEEL PRODUCTION TANK
CAPACITY 80 M³

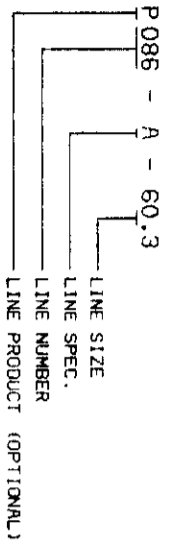


VALVE IDENTIFICATION



- VALVE TYPE (OPTIONAL)
- BA-BALL
 - CH-CHECK
 - GA-GATE
 - GL-GLOBE
 - NE-NEEDLE
 - PL-PLUG
 - BU-BUTTERFLY
 - CL-CONTROL
 - CK-CHOKE
- RATING (OPTIONAL)
- 15 - 150*
 - 30 - 300*
 - 60 - 600*
 - 90 - 900*
 - 150 - 1500*
 - 250 - 2500*
 - GR - GRAYLOC

LINE NUMBERING



PRODUCT SYMBOL

- PRODUCT
- A AIR
 - G GAS
 - D OIL
 - M MULTIPHASE
 - GL GLYCOL
 - W WATER
 - S STEAM

LEGEND

- 1 PANEL MOUNTED
- 2 LOCALLY MOUNTED
- 3 LEVEL CONTROL
- 4 LEVEL CONTROL VALVE
- 5 LEVEL SWITCH HIGH
- 6 LEVEL SWITCH HIGH LEVEL
- 7 LEVEL SWITCH LOW
- 8 LEVEL SHUTDOWN LOW
- 9 LOW SELECT RELAY
- 10 LEVEL SHUTDOWN LOW
- 11 LEVEL SHUTDOWN HIGH
- 12 LINE OIL DRAIN
- 13 DIFFERENTIAL PRESSURE SWITCH LOW
- 14 DIFFERENTIAL PRESSURE SWITCH LOW
- 15 DE-PRESSURE VALVE
- 16 PRESSURE INDICATOR
- 17 PRESSURE REDUCER
- 18 PRESSURE SAFETY VALVE
- 19 PRESSURE REDUCING VALVE
- 20 POSITIVE DISPLACEMENT METER
- 21 PRESSURE SWITCH HIGH
- 22 PRESSURE SWITCH LOW
- 23 PRESSURE CONTROL VALVE
- 24 PRESSURE SHUTDOWN LOW
- 25 PRESSURE SHUTDOWN HIGH
- 26 PRESSURE DIFFERENTIAL INDICATOR
- 27 PRESSURE CONTROL
- 28 BACK PRESSURE VALVE
- 29 TEMPERATURE INDICATOR
- 30 TEMPERATURE REDUCER
- 31 TEMPERATURE SHUTDOWN HIGH
- 32 TEMPERATURE SHUTDOWN LOW
- 33 TEMPERATURE INDICATING CONTROL
- 34 TEMPERATURE SWITCH HIGH
- 35 TEMPERATURE SWITCH LOW
- 36 FLOW RESTRICTOR
- 37 SHUTDOWN VALVE
- 38 EMERGENCY SHUTDOWN VALVE
- 39 VIBRATION SWITCH HIGH
- 40 HAND VALVE
- 41 HAND CONTROL VALVE
- 42 FLOW SWITCH
- 31 PROCESS PIPING (PRIMARY)
- 32 PROCESS PIPING (SECONDARY)
- 33 PNEUMATIC INSTRUMENT PIPING
- 34 ELECTRICAL LEAD
- 35 INSULATED LINE (25 MM HOT)
- 36 INSULATED LINE (25 MM COLD)
- 37 GATE VALVE
- 38 CHECK VALVE
- 39 BALL VALVE
- 40 GLOBE VALVE
- 41 NEEDLE VALVE
- 42 BUTTERFLY VALVE
- 43 THREE-WAY VALVE
- 44 PRESSURE SAFETY VALVE
- 45 WASTE VALVE
- 46 CONTROL VALVE WITH DIAPHRAGM OPERATION
- 47 PRESSURE REDUCING VALVE (SELF CONTAINED)
- 48 PRESSURE REDUCING VALVE (EXTERNAL)
- 49 ELECTRICALLY OPERATED
- 50 REDUCER
- 51 FLANGES
- 52 SPECTACLE BLIND
- 53 BLIND FLANGE
- 54 STRAINER
- 55 TIE-IN NUMBER

LINE	SPECIFICATION	FLANGES	SERVICES
A	ANSI 150	RF	PROCESS
B	ANSI 300	RF	PROCESS
C	ANSI 600	RF	PROCESS
D	ANSI 900	RTJ	PROCESS
E	ANSI 1500	RTJ	PROCESS
F	ANSI 2500	RTJ	PROCESS
G	SPECIFY	GRAYLOC	PROCESS
H	ANSI 150	RF	AIR, WATER
J	ANSI 150	RF	DRAINING
K	ANSI 1500	RF	GLYCOL INJECTION

NOTE:

ADDITION OF SUFFIX 'S' TO A LINE SPEC. INDICATES SOOT SERVICE

DESIGN NO.	REV. NO.	ISSUED FOR APPROVAL	DESIGNER	CHECKED	DATE	FILE	SCALE	NTS	F-18-157	REV. A
REFERENCE DRAWINGS										
REVISIONS										
CHEVRON Canada Resources Limited										
BATTERY										
2-11-10-28 WPM										
FLOW DIAGRAM										

Inter-Departmental Memo

To .

Mr. Bob Dubreuil
Chief Petroleum Engineer

Date Sept. 19/86

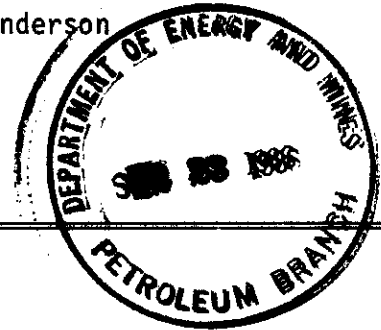
From

Jed Sanderson

Telephone

Subject

OMEGA GAS PLANT CONDENSATE MEASUREMENT



The following information was gathered after an onsite inspection of the measuring system and conversation with one of the plant operators:

- average daily production - 7-10 m³
- measured daily in the morning by stick gauge
- if taken for service work, it is stick gauged on by Paraffin Services and metered off. Rolling "M" stick gauge on and off.
- Sales to ICG are metered(Condensate shipped alone)
- Storage is in a 1 000 bbl closed in tank, vented to the vapour recovery unit.

Inter-Departmental Memo

To Clare Moster
Director,
Petroleum Branch

Date May 8, 1985

From Bruce Ball
Economist

File # 57311



Subject COMMENTS ON OMEGA'S DEEMED GAS
SALES IN MANITOBA

Telephone

The following are my views on the proposed gas sale plan which are the same as I mentioned on the phone Friday.

1. One concern about a deemed sale in Manitoba is that a third party, not involved in the arrangement could object with enough authority, the sale could be found unacceptable.

For example, SPC and TCPL had a contract for gas at a certain price which the NEB found unacceptable after the Energy Administration Act, 1976, and increased the price four times. That matter is still before the Courts.

Therefore, an agreement would be improved if it was approved or accepted in principle by the two provincial governments and the federal Minister of EMR.

With a new market-oriented pricing regime, a single Alberta border price will disappear so there may be less concern about a unique separate gas price arrangement. This, however, will not be confirmed or available until November at the earliest.

2. It would be important for the Minister to know the details of the arrangement and to be able to justify the agreement and its deemed price.
 - i) that it was the best use of the resource. The gas sold was surplus to reservoir requirements and to any local use;
 - ii) that the price of the arrangement, sale to SPC and recovery by ICG was the most economic:
 - a) that ICG was able to take the gas at a cost no more than it was paying for alternative gas supply, and
 - b) that Omega was able to sell the gas at a price which exceeded any other uses, such as a pipeline to Virden or Brandon.

Clare Moster

May 8, 1985

3. The current pipeline tariff for sales to ICG at Brandon is 46.6¢/GJ, which with the cost of gas itself becomes \$3.26/GJ. The TCPL tariff between Saskatchewan and Manitoba zones, depending upon the load factor, is about 14¢/GJ. If SPC charges 20¢ for transmission to TCPL facilities and the truck transport to Gainsborough is \$1.00 - \$1.50/GJ, then Omega's field price would be \$1.42 - \$1.92/GJ.



Bruce Ball

RBB/vgg

cc: R.Pritchard

#2.79 Alberta border

#0.466 TCPL

Regina

0.14 TCPL

#3.26

Brandon

0.20
SPC

Saskatoon

truck

1.00 - 1.50

Wankoda

1.42 - 1.92



Inter-Departmental Memo

To Mr. Bob Dubreuil
Chief Petroleum Engineer

Date May 6/85
From Keith Lowdon

Subject OMEGA GAS PLANT INSPECTION

Telephone

On April 19/85, at the request of Mr. Don McDonald, a safety and health officer employed by the Workplace Safety and Health Division, I accompanied McDonald on an inspection of the Omega Gas Plant.

A concern had been directed to Mr. McDonald's department regarding the safety of the evening and night personnel, who are presently working alone.

Mr. Max Lane was Omega's representative during the inspection, which concentrated on the procedures and mechanisms, that in the case of an emergency, would provide protection for the workers.

McDonald requested the following be done:

- i) a safety committee be formed, consisting of Omega operators and management. This committee must meet every 90 days and submit their minutes to Workplace Safety and Health.
- ii) all personnel at the gas plant must wear hard hats and protective boots.
- iii) another first aid kit be purchased for the plant.
- iv) hearing protection be provided for use in the compressor shack.

.....2

First Fold

Inter-Departmental Memo

To .

Date

From

Subject

"INSPECTION" continued.....2

Telephone

On the matter of solitary staffing at the plant, McDonald questioned Lane on what the operator is to do in the case of an emergency, and he suggested that this could be a matter of concern for the safety committee.

He also suggested that air pack drills and training be implemented on a more frequent basis.

First | Fold

Inter-Departmental Memo

To

Date March 20, 1985

From Bruce Ball

MEMO TO FILE

Subject

MEETING ON WASKADA GAS DELIVERIES
VIA NOVACORP.

Telephone

PRESENT:

DAVID THOMPSON, Manager, Novacorp Pressure Transport Ltd.

CLARE MOSTER

BOB DUBREUIL

BRUCE BALL

Mr. Thompson described Novacorp's ability to truck gas using truck-trailers that carry 180 mcf/load up to 1,500 mcf/day often with three trailers, one loading, unloading and travelling. It is used in Alberta to fuel steam generation in EOR projects in remote or for temporary applications.

He said Omega is anxious to deliver gas as its gas injection has "broken through" indicating limited reservoir use. Its supply in 750 mcf/day. It sees three options for the Waskada gas:

1. Sale to SPC at Gainsborough, 35 miles. This is an immediate use for which SPC would charge 18¢/GJ for delivery of equal volumes to TCPL for use by ICG at Brandon. The TCPL cost between Saskatchewan and Manitoba is 13¢/GJ at 100% LF, so Omega's price would be about 3.00/GJ less Novacorp charge. Mr. Thompson said the most economic trucking schedule is for twice the volume over a 25 mile route.
2. Sale to ICG at Virden. Mr. Didur said ICG would take the gas at TCPL's interruptible rate, which \$3.02 - 3.08/GJ for summer and winter deliveries in Manitoba. Virden is 60 miles.
3. Sales to end-users such as farm and industry in the area. This is the most economic since their price is a retail one, from which the trucking charge would leave the greatest net-back to Omega. Fuel oil at 30¢/l is equivalent to \$8.87/GJ. Mr. Thompson inquired about the size and pressure of ICG's gas supply at Virden. It has a 3½" lateral at about 225 psi which would be ideal for Novacorp's deliveries at 2,400 psi. However, 750 mcf/d may exceed Virden's summer requirements. Also, the odorizer is at Miniota's regulator station, not at Virden's pressure station.

He also inquired about potential farm use and size of farms. The names of farm representatives in the areas were given as well as some of the large farmers. He is considering a tour of the area.

March 21, 1985

Novacorp Pressure Transport Ltd.
Box 2535
Postal Station "M"
Calgary, Alberta
T2P 2N6

Attention: D. R. Thompson, P. Eng.,
Manager, Business Development

Dear Dave:

As discussed in your recent visit, enclosed is a map showing the locations of batteries, the current oil rate ($m^3/month$) and the estimated gas rate (MCFD). The gas rates are calculated assuming production at solution gas levels with the reservoir at or above the bubble point. The gas rates plotted are gross rates and do not include any gas that may be used for treater fuel. You may want to contact Mr. Cal Folden, Area Supervisor, Chevron Canada Resources Limited in Virden (748-1334). Cal should be able to provide you with volumes flared at each location operated by Chevron (about 80% of production in Virden and Baly Fields is operated by Chevron).

With respect to large farmers in the area, Attachment 1 is a list of some of the larger farmers in the Waskada/Deloraine Area. All of these farms are primarily grain producers. A map of surface ownership in this area can be obtained from the Turtle Mountain Conservation District in Deloraine at 747-2530.

Yours sincerely,



L. R. Dubreuil
Chief Petroleum Engineer
Petroleum Branch

LED/sb
Att:

Attachment No. 1

Major Farming Operations

Waskada Area

McKinney Farms	- Waskada
Cal Gerwin	- Waskada
R. Mosset	- Waskada
Nestibo	- Waskada
MacGregors	- Waskada
J. Griffith	- Waskada
Edwards	- Deloraine
Ransom	- Deloraine

Inter-Departmental Memo

To

Date March 20, 1985

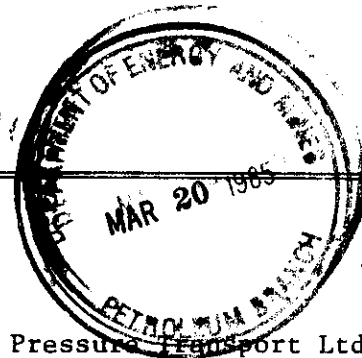
From Bruce Ball

MEMO TO FILE

Subject

MEETING ON WASKADA GAS DELIVERIES
VIA NOVACORP.

Telephone



PRESENT:

DAVID THOMPSON, Manager, Novacorp Pressure Transport Ltd.

CLARE MOSTER

BOB DUBREUIL

BRUCE BALL

Mr. Thompson described Novacorp's ability to truck gas using truck-trailers that carry 180 mcf/load up to 1,500 mcf/day often with three trailers, one loading, unloading and travelling. It is used in Alberta to fuel steam generation in EOR projects in remote or for temporary applications.

He said Omega is anxious to deliver gas as its gas injection has "broken through" indicating limited reservoir use. Its supply in 750 mcf/day. It sees three options for the Waskada gas:

1. Sale to SPC at Gainsborough, 35 miles. This is an immediate use for which SPC would charge 18¢/GJ for delivery of equal volumes to TCPL for use by ICG at Brandon. The TCPL cost between Saskatchewan and Manitoba is 13¢/GJ at 100% LF, 25 Omega's price would be about 3.00/GJ less Novacorp charge. Mr. Thompson said the most economic trucking schedule is for twice the volume over a 25 mile route.
2. Sale to ICG at Virden. Mr. Didur said ICG would take the gas at TCPL's interruptible rate, which \$3.02 - 3.08/GJ for summer and winter deliveries in Manitoba. Virden is 60 miles.
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He also inquired about potential farm use and size of farms. The names of farm representatives in the areas were given as well as some of the large farmers. He is considering a tour of the area.

First | Fold

- 2 -

Bob Dubreuil referred to the amount of gas flared from some of the large batteries at Virden and the potential for its pick-up. A map of this area and gas supply figures will be prepared for Mr. Thompson.

BB.
Bruce Ball

RBB/vgg

cc: C. Moster

B. Dubreuil

Tanker truck helps tap gas wells in Wyoming



Natural gas load is picked up at the wellhead in Pinedale field, Sublette County, Wyo., in the Green River basin, by a specially designed truck/tube trailer owned by Pressure Transport Inc., Austin, Tex. Purchaser is Mountain Fuel Supply Co. Gas is produced from wells owned by Wexpro Co., Mountain Fuel's exploration/production affiliate, and from other wells in the area. Pressure Transport hauls the gas 37 miles to a point 10 miles southwest of Big Piney, Wyo., where it's offloaded into a Northwest Pipeline Corp. 16 in. line for redelivery for Mountain Fuel. Project commenced late in November 1982 under a 9 month contract. Deliveries have averaged about 1.3 MMcf/d, requiring seven round trips/day by truck. Gas is compressed to 2,400 psi each load, averaging about 180-185 Mcf/load.

Pressure Transport Inc.
5407 North I. H. 35, Suite 304
Austin, Texas 78723

The Pressure Transport System is protected under U.S. Patents No. 4,139,019 and 4,213,476 and Canadian Patent No. 1,073,399 as well as other issued and pending patents owned by Texas Gas Transport Co., Austin, Texas.

* 2 well
batt. only

January 1985

Beaverhead	8-20-10-26	13.4
	16-3-10-28	158.6
	16-17-11-26	195.5
	10-28-8-27	24.1
	15-25-9-29	917.4

CNW	4-21-3-28	120.1
	2-24-3-29	316.0

Can - Tex	(Virden)	309.0
-----------	----------	-------

Canadian Reserve	8-19-11-26	229.2
------------------	------------	-------

C.W. Causton	* 6-7-3-28	10.9
--------------	------------	------

	22	62
--	----	----

Chauon	Daley Prod. Batt. 29	438.8	9.3
	Pier son Batt. "	75.8	1.5
	North Virden Batt #16	102.8	1.2
	" " " #17	32.1	0.4

NVS #1	13 594.9	163.3 $\times 10^3 m^3$
--------	----------	-------------------------

Souris - Hartney	75.3	0.4
------------------	------	-----

VR #1	4 015.0	64.4
-------	---------	------

VR #2	1 659.6	26.5
-------	---------	------

VR #3	3 051.5	48.6
-------	---------	------

Daley #3	2 397.5	50.3
----------	---------	------

Rout. #1	2 628.8	42.2
----------	---------	------

Witte Water #1	41.2	0.8
----------------	------	-----

West Butler	46.8	0.9
-------------	------	-----

		Oil	Gas
Chimon Cont'd	Wookada 10-1	337.8	0
	" 4-18	229.2	0
	" 8-12	339.8	0
	" 3-12	311.6	0
Dona	* 4-29-11-26	83.2	
Fawn	16-14-1-21	44.3	
Geocrude	Baby #1	1 688.4 G	46.0 G
Garrard	* 8-8-10-26	82.3	
ICG	13-29-11-26	402.2	
Koda	7-10-12-29	125.7	
Lyleston	12-30-2-28	178.2	
Mead	* 12-26-10-26	88.8	
	Ebay #1 5-26-9-29	498.8	
Murphy	1-22-10-26	259.2	
	14-17-10-26	111.0	
New Super	* 1-9-10-26	76.8	
	8-28-10-26	50.9	
	12-8-11-26	170.1	
	16-12-1-26	921.3	
	12-7-1-25	776.9	
	8-8-6-29	276.0	

New Stone (Cont'd)

2-32-9-28

141.4

Norcross

10-15-10-26

82.4

Onaga

11-30-1-25

13 823.5 0

1 048.6 6

Quart

4-21-3-28

40.1

Roman Q.

11-27-9-28

448.2

" Hol

7-35-9-28

1 257.2

Rideau

* 9-28-9-29

340.0

12-19-12-29

191.4

5-15-3-29

154.1

15-8-12-29

21.5

Rory

15-2-3-21

933.3

* 13-14-2-21

255.4

9-26-1-26

76.4

Snedden

E. Rat #1

873.9

Sosko

3-22-1-25

104.4

Siskail

5-18-12-29

65.1

Surry

11-10-9-28

100.4

Shannon

14-18-11-26

61.8

Suncor

3-20-11-26

206.2

Tepaco

Sutcliffe Hartney

126.9

Trans-Canada

* 14-20-11-26

18.5

2-30-11-26

280.6

Triton

3-24-10-28

177.2

5-6-9-27

125.9

Tundra

13-19-1-25

387.6

1-18-3-28

743.3

7-11-3-29

216.3

9-31-5-29

349.3

MONTHLY GAS ACCOUNTING STATEMENT - SUPPLEMENT

1. BATTERY AND GAS PLANT METER READINGS

Meter Number	Meter Description	Meter Reading (10 ³ m ³)
2	TOTAL TREATER GAS	
5	GAS TO 3RD STAGE COMPRESSION <i>add</i>	
6	TOTAL INJECTION GAS	
7	FLARED GAS	
8	TREATER AND PLANT FUEL	
9	COMPRESSOR FUEL	
10	TOTAL PROCESS GAS	
01	Other Receipts	
02		
03		

2. TOTAL OTHER RAW GAS RECEIPTS

Meter/Description	01	+	02	+	03	= TOTAL OTHER RAW GAS RECEIPTS
Volume (10 ³ m ³)						

3. TOTAL FLARED RAW GAS

Meter/Description	6	+	7	+	9	-	5	= TOTAL FLARED RAW GAS
Volume (10 ³ m ³)								

↳ If meter 7=0, Total Flared Raw Gas = 0 ———→

4. TOTAL PRORATED GATHERED RAW GAS

Meter/Description	10	+	Flared Raw Gas	-	Total Other Receipts	= Prorated Raw Gas
Volume (10 ³ m ³)						

5. TOTAL STOCK TANK VAPOURS

Meter/Description	Prorated Raw Gas	-	2	= Total Stock Tank Vapours
Volume (10 ³ m ³)				

6. LPG EQUIVALENT GAS VOLUMES

Product	Volume (m ³)	Conversion Factor (10 ³ m ³ Gas/m ³ Liquid)	Equivalent Gas Volume (10 ³ m ³)
Propane	x	0.2703	=
Butane	x	0.2403	=
Condensate	x	0.2197	=
TOTAL			

7. PROCESS SHRINKAGE & METER DIFFERENCE

Meter Description	10	-	5	-	8	= Process Shrinkage & Meter Diff.
Volume (10 ³ m ³)						

8. ACID GAS VOLUME & METER DIFFERENCE

Meter Description	Process Shrinkage & Metering Difference	-	Total LPG Equivalent Gas	=	Acid Gas Volume & Metering Difference
Volume/m ³					

WASKADA FIELD
MONTHLY GAS ACCOUNTING STATEMENT

MONTH: _____ 19__

Item	DESCRIPTION	VOLUME (10 ³ m ³)
1	TOTAL OTHER RAW GAS RECEIPTS (see supplement)	
2	TOTAL FLARED RAW GAS (see supplement)	
3	TOTAL PRORATED GATHERED RAW GAS (see supplement)	
4	TOTAL UNGATHERED RAW GAS (estimated)	
5	TOTAL PRODUCED RAW GAS (item 3 + item 4)	
6	TOTAL AVAILABLE RAW PROCESS GAS (item 1 + item 3)	
7	TOTAL RAW PROCESS GAS (meter 10)	
8	TOTAL STOCK TANK VAPOURS (see supplement)	
9	PROCESS SHRINKAGE & METER DIFFERENCE (see supplement)	
10	LEAN GAS PRODUCED (meter 5 + meter 8)	
11	TOTAL LEAN GAS USED AS FUEL (meter 8 + meter 9)	
12	TOTAL LEAN GAS FLARED (meter 7 - item 2) (0 if meter 7 = 0)	
13	TOTAL LEAN GAS INJECTED (meter 6)	

PRORATION OF LEAN GAS INJECTION

Well Name	METER ID	HOURS ON	METER READING (10 ³ m ³)	PRORATED INJECTION (10 ³ m ³)
5-13-1-26 WPM	I1			
13-13-1-26 WPM	I2			
15-13-1-26 WPM	I3			
15-14-1-26 WPM	I4			
7-23-1-26 WPM	I5			
5-24-1-26 WPM	I6			
7-24-1-26 WPM	I7			
Totals				

PRORATION FACTOR = (item 13) / Σ (INJECTION METER READINGS)

=

=

MONTHLY LPG DISPOSITION STATEMENT

I LPG INVENTORIES, PRODUCTION & DISPOSITIONS

Product	Opening Inventory + (m ³)	Total Sales (m ³) +	Field Use (m ³) -	Closing Inventory =	Liquid Production (m ³)
Propane					
Butane					
Condensate					

II LIQUID PROPANE SALES DETAILS

Buyer & Buyer's Location	Sales Volume (m ³)	Selling Price Price (\$/m ³)	Sales Value (\$)
Totals & Average Selling Price			

III LIQUID BUTANE SALES DETAILS

Buyer & Buyer's Location	Sales Volume (m ³)	Selling Price (\$/m ³)	Sales Value (\$)
Totals & Average Selling Price			

IV LIQUID CONDENSATE SALES DETAILS

Buyer & Buyer's Location	Sales Volume (m ³)	Selling Price (\$/m ³)	Sales Value (\$)
Totals & Average Selling Price			

OMEGA HYDROCARBONS LTD. 11-30-1-25 GAS PLANT

ROYALTY AND TAX STATEMENT MONTH: 19

UNIT - WASKADA LOWER AMARANTH UNIT #1

WELL	PRORATED GAS PRODUCTION (10 ³ m ³)	PRORATED PROCESS GAS PURCHASED (10 ³ m ³)	TRACT FACTOR	ALLOCATED GAS PRODUCTION (10 ³ m ³)	ALLOCATED PROCESS GAS PURCHASED (10 ³ m ³)	SELLING PRICE: (\$/10 ³ m ³)	ROYALTY/TAX PAYABLE (^{CLAW} \$)
------	---	--	-----------------	--	---	---	---

9-23-1-26

8-26-1-26

TOTALS

A B 1.0000 A B

A = A, B = B

OMEGA HYDROCARBONS LTD. 11-30-1-25 GAS PLANT

ROYALTY AND TAX STATEMENT

MONTH: 19

SELLING PRICE (\$/m³)

ROYALTY/TAX
PAYABLE
(\$)

PRORATED PROCESS
GAS PURCHASED
(10³ m³)

PRORATED GAS
PRODUCTION
(10³ m³)

NON UNIT WELLS

1-18-1-25

3-14-2-26

TOTAL:

ENERGY RESOURCES CONSERVATION BOARD
PROVINCE OF ALBERTA

MONTHLY GAS PROCESSING PLANT PRODUCTS STATEMENT

PROPANE, BUTANE, PENTANES PLUS AND OTHER QUANTITIES IN m³ AT 15° C
SULPHUR QUANTITIES IN TONNES
ETHANE IN KILOGRAMS

Name of Plant _____ Code _____ Month _____ 19 _____

SCHEDULE OF PRODUCTS					
	SULPHUR	PENTANES PLUS	OTHER	BUTANES	PROPANE
SUPPLY					
Opening Inventory					
Monthly Production					
Less: Returned to Formation					
From Other Plants					
TOTAL AVAILABLE SUPPLY					
DISPOSITION					
Plant Fuel					
Refrigerant					
Losses and Adjustments					
Gas Enrichment					
Total Shipments					
To Other Plants					
To Injection Schemes					
Further Processing					
Closing Inventory					
TOTAL DISPOSITION					

DETAIL OF SHIPMENTS		
	BUTANES	PROPANE
ALBERTA		
Distributors		
Petrochemical		
Pipelines: Specify		
Miscible Flood: Specify		
STORAGE		
Alberta: Specify		
Ex Alberta: Specify		
FINAL DESTINATION EX ALBERTA		
British Columbia		
Saskatchewan		
Manitoba		
Ontario		
Quebec		
Maritimes		
N.W.T. & Yukon		
U.S.A. District I		
U.S.A. District II		
U.S.A. District IV		
U.S.A. District V		
Offshore		
TOTAL SHIPMENTS		

PIPELINE / TRANSPORTATION COMPANY / OTHER: SPECIFY	PENTANES PLUS

CONSIGNEE: SPECIFY	SULPHUR

COMPANY NAME _____ SIGNED BY _____

ADDRESS _____ DATE _____

SYSTEM CODE	YEAR	MO
		7

**ENERGY RESOURCES CONSERVATION BOARD
ALBERTA, CANADA**

Name of gathering system

SUBMITTED BY :		
ADDRESS		
CERTIFIED CORRECT		
DATE	TELEPHONE	

SYSTEM USE		900
FLARED		12
SYSTEM FUEL		23
OTHER (SPECIFY)		34
METERING DIFFERENCE		45
PROCESSING SHRINKAGE (SPECIFY)		56
TOTAL DISPOSITION and SYSTEM USE		67
FUEL GAS RECEIVED FROM ANOTHER SOURCE (SPECIFY)		78

DATE	TELEPHONE
11/11/54	11/11/54
11/12/54	11/12/54
11/13/54	11/13/54
11/14/54	11/14/54
11/15/54	11/15/54
11/16/54	11/16/54
11/17/54	11/17/54
11/18/54	11/18/54
11/19/54	11/19/54
11/20/54	11/20/54
11/21/54	11/21/54
11/22/54	11/22/54
11/23/54	11/23/54
11/24/54	11/24/54
11/25/54	11/25/54
11/26/54	11/26/54
11/27/54	11/27/54
11/28/54	11/28/54
11/29/54	11/29/54
11/30/54	11/30/54

MONTHLY GAS PROCESSING STATEMENT

Gas Volumes in 10³ m³ @ 101.325 kPa and 15°C
Water Volumes in m³ @ 101.325 kPa and 15°C (Precision 0.0)

ENERGY RESOURCES CONSERVATION BOARD
CALGARY, ALBERTA

GAS PLANT	MO	YR

Name of plant _____

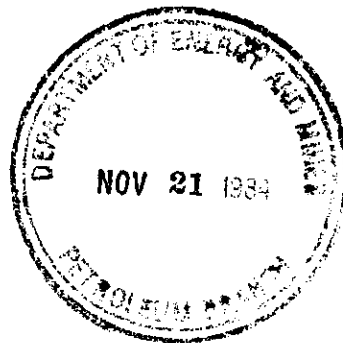
RECEIPTS				DISPOSITION									
SOURCE OF RECEIPTS				ESTIMATED			PRORATED SALES			CONSUMERS OR DISTRIBUTORS OR TRANSPORTERS			
SYSTEM / PLANT	FIELD	POOL	VOLUME	%	VOLUME		LEASE FUEL		GATHERING SYSTEM / BATTERY	VOLUME		CODE	
							FIELD	42	46	57	61	72	76
001	16	20	77				38	42	46	57	61	72	76
002													
003													
004													
005													
006													
007													
008													
009													
010													
011													
012													
013													
014													
015													
016													
017													
018													
019													
020													
021													
022													
TOTAL 80012				TOTALS			73			34		45	
												58	
												102	106

SUBMITTED BY:		ADDRESS		DATE		TELEPHONE	
CERTIFIED CORRECT							
PROCESSING SHRINKAGE (REPORT AS GAS VOLUME EQUIVALENTS) 900		PLANT USE		WATER DISPOSITION		SURFACE PIT	
OVERHEAD VAPORS FLARED	12	FLARED		SUBSURFACE			
ACID GAS	13	RAW GAS	73	NAME		CODE	
PENTANES PLUS	25	RESIDUE GAS	90			AMOUNT	
PROPANES	34	PLANT FUEL					
BUTANES	42	OVERHEAD GAS	87				
ETHANES	50	RESIDUE GAS	34				
NGL	38	METERING DIFFERENCE	100				
OTHER LIQUIDS	66	TOTAL DISPOSITION	110	VALUE CENTS PER UNIT			
				\$ VALUE TO PURCHASER / DISTRIBUTOR			



1300 SUN LIFE PLAZA III
112 - 4th AVENUE S.W.
CALGARY, ALBERTA, CANADA T2P 0H3
TELEPHONE (403) 261-0743

November 15, 1984



Petroleum Branch
555-330, Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. Brad Thiessen

Dear Sir:

Re: Waskada Gas Accounting

Further to our phone conversation of November 8, 1984 I am submitting an information package addressing the major points of our discussion. The package is divided into the following sections:

- A Original Gas Metering Problems
- B Gas Plant Operational Problems
- C Proposed Gas Metering
- D Retroactive Gas Accounting, March 1984 - October 1984
- E Report Forms

We are anxious to finalize a metering/reporting system and would appreciate input from your department.

Yours truly,

OMEGA HYDROCARBONS LTD.

A handwritten signature in dark ink, appearing to read "G.E. Patey".

G.E. Patey
Vice-President, Production

GP/jr

encl.

A Original Gas Metering Problems

1. Critical gas volume measurements like 'Total Produced Gas' and 'Total Processed Gas' required lengthy calculation by difference using the original orifice meter placements. Meter errors were compounded giving unreliable results. In addition, meter #4 of the old system (see Figure 1A) was measuring a gas stream that had undergone shrinkage from several liquid dumps upstream of the meter. The equivalent gas volume of these liquids was not accounted for.
2. A lab or field mix-up resulted in the wrong gas analysis being used for treater gas and injection gas chart reading. This caused substantial errors in "measured" gas volumes and made it impossible to balance gas volumes throughout the battery and plant. The problem was discovered early in November and corrected analysis were used to re-read October's gas charts.
3. The PD meter measuring heater/treater fuel gas (meter #8 on Figure 1 and 1A) was continually breaking down or giving unreliable readings.
4. The chart readers did not read any flare gas volumes since the static pressure trace on the charts was so close to 0 psig. Even though the differential pressure trace often showed large deflections, integrating the chart assuming 0 static pressure resulted in 0 gas volume.

B Gas Plant Operational Problems

1. Rapid wear and failure of the propane refridgerant compressors caused intermittent shutdowns over a several month period. The shut downs could last as long as a week if the compressor(s) had to be rebuilt. The cause of the problem was very elusive and was finally determined to be a piping geometry error. An additional shut-down was required to enable piping corrections to be made.
2. During the initial start-up of the plant, balancing flow rates and temperatures was almost impossible. It was found that the temperature and pressure controllers were inaccurate and allowed too much variation around their set points. In order to change out these controllers the entire plant had to be shut down and purged.
3. Excessive amounts of make-up water were being used in the amine sweetening system. As a result, there was a large build-up of mineral deposits in the lines and vessels that reduced the system's efficiency. A one week shut down was required to clean out these deposits. A redesigned reboiler and condensor has since minimized make-up water requirements.

B Gas Plant Operational Problems Cont.....

4. Installation of the "Total Injection Gas Meter" (meter #6 in Figures 1 and 1A) prevented reinjection of lean gas for several days.
5. Meter #8 (Figures 1 and 1A) has been replaced with a new PD meter and is now functioning properly.
6. Numerous problems of lesser magnitude than those mentioned above have caused shut-downs from time to time. These problems have been solved as they occur and now the plant is capable of operating for extended periods of time.

c Proposed Gas Metering

1. Figure 1 shows what we feel to be the ideal meter positioning for the battery and plant. Figure 1A is included to show the existing system.

Pertinent details are as follows:

- We propose to use Meter #5 to obtain 'TOTAL PROCESSED GAS' volumes. Whenever the valves are open to product storage, this meter plus Meter #8 will show total lean gas that has passed through the refrigeration process. Using a single ratio derived from gas analysis we can calculate 'TOTAL PROCESSED GAS'. Bi-annual gas analysis will ensure an accurate ratio. In any instance where LPG's are not being extracted from the raw gas, Meter #5 will be bypassed manually and gas passing to the third stage of compression will not be metered. This procedure will be incorporated into the plant operating/shut-down/start-up manual to make sure it is followed.

meter #5 also gives total processed gas directly.

> if no lean gas 7 reads raw gas flared

- Meter #10 is a new 6" orifice meter run on the main compressor suction. Its location is before any liquid dumps and therefore it provides a more reliable reading than the old meter #4. 'TOTAL PRODUCED GAS' is calculated as follows:

agree

TOTAL PRODUCED GAS = TOTAL COMPRESSOR GAS + FLARED RAW GAS
USING METER NUMBERS: = 10 + (7 - (5 - 9 - 6))

Flared raw gas

During normal operating conditions, no gas will be flared and the 'FLARED RAW GAS' term drops out of the equation leaving a direct reading of meter #10 for 'TOTAL PRODUCED GAS'.

- Meter #6 is now installed and operating. It allows us to prorate to the individual injectors and also enables calculation of 'FLARED LEAN GAS' as follows:

FLARED LEAN GAS = 5 - 9 - 6

✓

N.B. IN ANTICIPATION OF YOUR ACCEPTANCE OF THIS REVISED METERING PROPOSAL WE HAVE ORDERED A 6 INCH ORIFICE METER RUN THAT WILL BE INSTALLED IN THE LOCATION SHOWN AS 10 ON FIGURE 1. WE WOULD LIKE TO HAVE IT IN PLACE AND OPERATING BY DECEMBER 1, 1984 TO ENABLE ACCURATE METERING FROM THAT DAY FORWARD. PLEASE ADVISE US AS SOON AS POSSIBLE IF THIS IS ACCEPTABLE. ✓

D Retroactive Gas Accounting March '84 - October '84

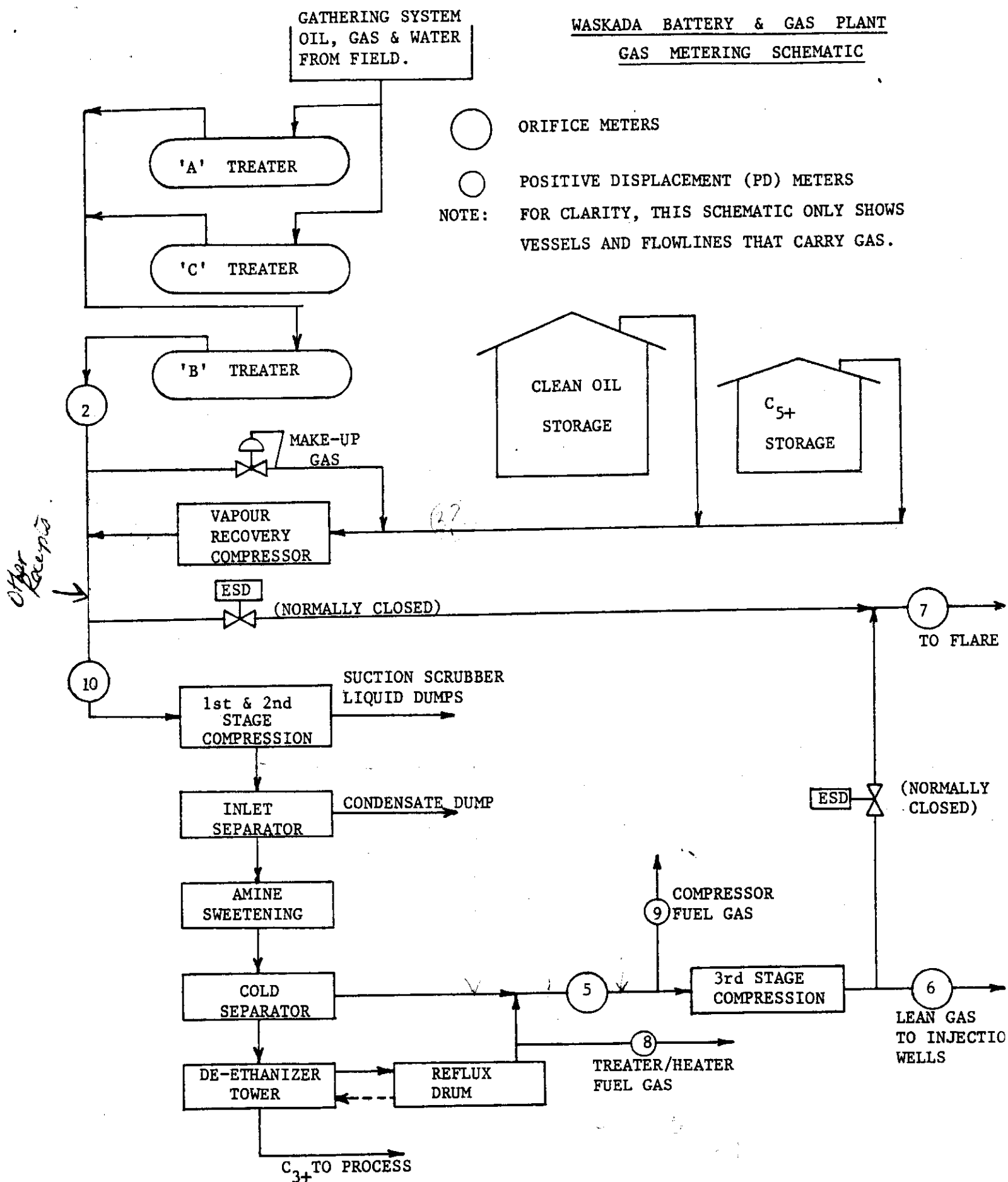
In the de-bugging stages of the plant, on-stream time was so sporadic and metering accuracy so suspect that measured gas volumes during this period are considered totally unreliable. To account for gas disposition the only firm numbers we have are liquid production volumes for propane, butane and C₅+. The processed gas volume can be determined with reasonable accuracy by calculating the equivalent gas volume for these liquids. Table 1 and its attached description summarize these calculations.

E Reporting Forms

Pending your approval of our proposed metering system, we will submit our proposed report forms. They will be based on Ed Wyse's original submittal but modified to be compatible with the new meter locations.

FIG. I

WASKADA BATTERY & GAS PLANT
GAS METERING SCHEMATIC



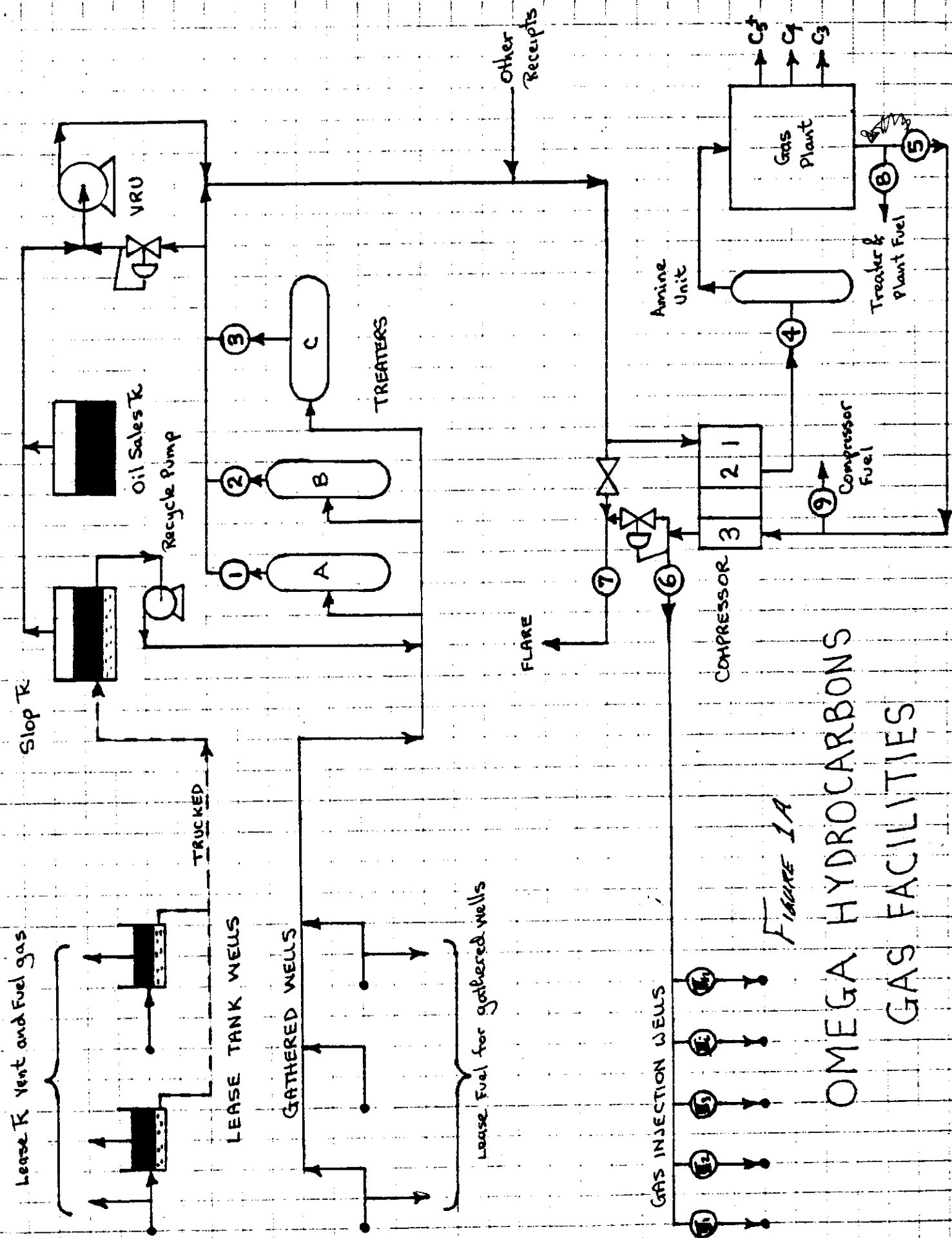


FIGURE 1A

OMEGA HYDROCARBONS GAS FACILITIES

July 184

TABLE 1 WASKADA GAS VOLUMES

<u>Month</u> <u>(1984)</u>	<u>Total Produced Including</u> <u>Lease Vented</u> (Km ³)	<u>Total</u> <u>Gathered</u> (Km ³)	<u>Total</u> <u>Processed</u> (Km ³)	<u>Total</u> <u>Injected</u> (Km ³)
March	2026.2	1535.9	593.5	0
April	1713.4	1361.0	579.6	0
May	1362.7	1032.2	526.9	0
June	2044.7	1529.3	512.0	200.5
July	1720.7	1337.8	786.5	420.3
August	1512.6	1150.4	590.2	563.6
September	1392.8	1094.6	0.0	211.7
October	1357.0	1209.5	657.0	471.9

raw gas injection

Source of Numbers:

- "Total Produced" and "Total Gathered" volumes are taken directly from the SI forms.
- "Total Processed Gas" is based on August's production records. LPG's produced in August were converted to equivalent gas volumes and the ratio of Process Gas/Equivalent Gas Volume of LPG's was used to back calculate "Total Processed Gas" for the other months. The plant was down during September and no gas was processed.
- "Total Injected Gas" is taken directly from the injection gas meter chart readings.

Calgary firm gets go-ahead to build plant in Manitoba

A Calgary oil company has been given provincial government permission to build a \$2.5-million natural gas plant in southwestern Manitoba's Wascada Oil Field.

The plant, being built by Omega Hydrocarbons Ltd., will be the first of its kind in the province, Manitoba Energy Minister Wilson Parasjuk announced yesterday.

It will be used to remove liquid hydrocarbons, such as propane and butane, from the raw natural gas and market them.

Parasjuk said the current practice is

to burn off most of the more than one million cubic feet of natural gas produced daily during the oil production process, resulting in the waste of a valuable natural resource.

He noted that until the recent mini-oil boom in the Wascada area, oil companies considered it uneconomical to build such a plant.

However, production in the Wascada field as of March was averaging about 3,690 barrels per day, and each barrel of oil produces about 300 cubic feet of gas, the minister said.

"This new plant will mean we will be

making better use of our natural resources," he said.

"Waste will be reduced. There will be increased revenues for the various interested parties, including the government of Manitoba, and emissions into our atmosphere will be significantly reduced."

Opposition energy critic Brian Ransom (Turtle Mountain) noted that it was the favorable tax changes implemented by the previous Lyon government that paved the way for increased oil exploration and development in southwestern Manitoba.



Parasjuk: Natural Gas

→ Bob
Gas Plant file
PS-1 25

MANIT^{BA}

Inter-Departmental Memo

Date May 26, 1983

To Mr. Larry Strachan
Chief, Environmental Control Programs
Dept. of The Environment
2 - 139 Tuxedo Blvd.

From L. R. Dubreuil
Chief Petroleum Engineer
Dept. of Energy & Mines
Petroleum Branch
975 Century St.

Telephone

Subject Re: Waskada Field - Gas Processing Plant

Further to the Oil and Natural Gas Conservation Board's letter of April 26, 1983 to Omega Hydrocarbons Ltd., regarding a proposed gas plant in the Waskada area, Omega has submitted additional information in support of its application. A copy of Omega's additional submission is attached for your review.

I would propose that once you have had an opportunity to review the attached material, we meet to discuss your particular concerns and your continuing involvement in the approval process. Please call me at 633-9543, (ext. 176) to set a time and place for a meeting.

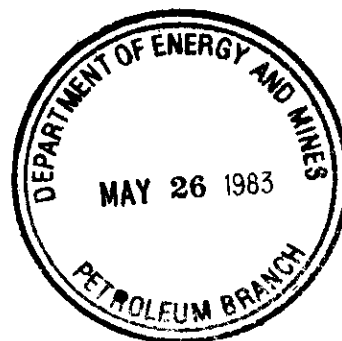
Original Signed By
L. R. DUBREUIL

L. R. Dubreuil

LRD/sb

Att:

cc: - The Oil and Natural Gas Conservation Board
- H. Clare Moster



June 8, 1983

M. A. Chochinov
Special Consultant
Energy Division
200 - 500 Portage Ave.

L. R. Dubreuil
Chief Petroleum Engineer
975 Century St.

Re: Gas Production - Waskada Field

Further to your recent request, attached (Table No. 1) is a forecast of solution gas production for the Waskada Field for the period 1983 - 2002.

The Waskada oil field is still in the relatively early stages of development, therefore any production prediction at this time is subject to substantial uncertainty. To minimize the effect of this, two cases reflecting an optimistic and a pessimistic oil rate are included. The range bracketed by these cases is considered to be the most probable situation at this time but it is entirely possible that further drilling and production history would result in production rates falling either above or below the range.

In calculating the gas production, it was assumed that available PVT data accurately affect solution gas levels and that 70% of the oil production originates from the Lower Amaranth Formation while the remaining 30% originates from the Mississippian Formations.

The figures on Table No. 1 represent gross production. Some portion of this (estimated at 10% during peak production periods and 50% at minimum production levels) would be used as fuel gas for treaters and other field facilities.

If you have any further questions with regards to this prediction, please contact the undersigned.

Original Signed By
L. R. DUBREUIL

L. R. Dubreuil

LRD/sb
Att:

cc: - H. C. Moster

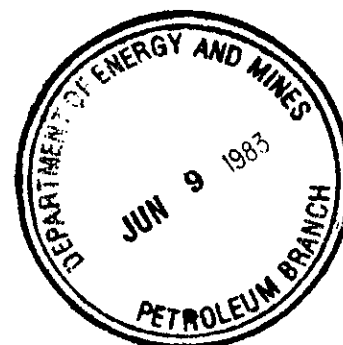


Table No. 1

Waskada Field Gas Production

Year	Oil Rate (BPD)		Gas Rate (MCF/d)	
	<u>HIGH</u>	<u>LOW</u>	<u>HIGH</u>	<u>LOW</u>
1983	4000	3500	1216	1064
1984	5000	3500	1520	1064
1985	5000	3250	1520	988
1986	4700	2950	1428	897
1987	4450	2700	1353	820
1988	4250	2500	1292	760
1989	4000	2300	1216	699
1990	3800	2100	1155	638
1991	3600	1900	1094	578
1992	3400	1750	1034	532
1993	3250	1620	988	492
1994	3100	1500	942	456
1995	2900	1360	882	413
1996	2750	1250	836	380
1997	2620	1150	796	350
1998	2500	1060	760	322
1999	2380	970	724	295
2000	2250	900	684	274
2001	2130	825	647	250
2002	2020	755	614	230

JUNE 15, 1983

STATEMENT TO THE HOUSE -
WASKADA GAS PLANT PLANNED

MR. SPEAKER:

I rise today to announce the approval recently granted by the Oil and Gas Conservation Board to Omega Hydrocarbons Ltd. to construct a gas liquids recovery plant in the Waskada oilfield.

Mr. Speaker, this plant is the first plant of its type in Manitoba's history and represents an investment by Omega Hydrocarbons of about \$2.5 million.

About 300 cubic feet of gas is presently produced with each barrel of oil taken from the Waskada field. With production averaging 3,600 barrels per day during March around Waskada, a substantial amount of natural gas is currently being produced. As drilling and exploration continues, over the next few months, it is anticipated that these volumes will increase.

Up until now, more than 1,000,000 cubic feet per day of natural gas has been flared and various economic benefits have been lost. However, once operative this plant will be able to process up to 3,000,000 cubic feet per day and be able to recover liquid hydrocarbons from the rich raw gas and market them throughout Western Canada. Current plans are that this facility will be operative by year end.

STATEMENT TO THE HOUSE

JUNE 15, 1983

During the plants operation various hydrocarbons such as propane and butane will be removed and, the dry raw gas will be flared. However, the feasibility of injecting these gases back into the producing formations as part of the enhanced recovery process, and for storage and possible future production and sale is currently being studied.

For Manitobans, this plant will mean that we will be making better use of our resources, waste will be reduced, there will be increased revenues for various interested parties, including the Government of Manitoba, and emissions to our atmosphere will be significantly reduced.

It is anticipated that other companies involved in the production of oil in the Waskada field will utilize this facility once fully operational.

Prior to commencing operation, the plant will be subject to various environmental controls and standards established by the Clean Environment Commission.

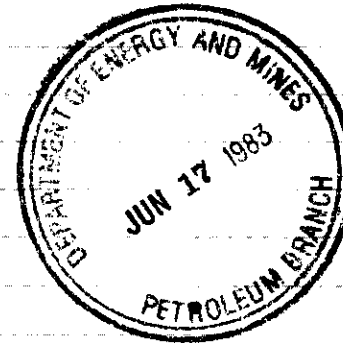
DATE: JUNE 16, 1983

MANIT^{BA}

Office of the Hon. Wilson Parasiuk
Minister of Energy and Mines
301 Legislative Building
Winnipeg, Manitoba R3C 0V8

COMMENTS:

To: DR. IAN HAUGH
CLARE MOSTER



Telephone:

- | | |
|---|---|
| <input type="radio"/> Take action | <input type="radio"/> Circulate |
| <input type="radio"/> Per your request | <input type="radio"/> See me re attached |
| <input type="radio"/> Call me on this matter | <input checked="" type="radio"/> For your information |
| <input type="radio"/> Investigate and report | <input type="radio"/> Supply data for my reply |
| <input type="radio"/> For your revision or approval | <input type="radio"/> Reply direct with copy to me |
| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |

MG-1298 (Transmittal/Route Slip)

WASKADA GAS PLANT PLANNED

Energy and Mines Minister Wilson D. Parasiuk announced today that Omega Hydrocarbons Ltd. has been authorized to initiate construction of a gas plant in the Waskada Oil Field.

Mr. Parasiuk stated that this will be the first such plant in Manitoba's history and that plans are underway to have the plant in operation before year end. The gas is produced in association with the oil production in the area which the Minister indicated had averaged 3,600 barrels per day during March, and is expected to increase throughout the year as development drilling continues. Approximately 300 cubic feet of gas is presently being produced with each barrel of oil. Some of the gas is used to operate current facilities, but more than one million cubic feet per day is presently being flared.

The Company feels that increasing gas volumes justify construction of the plant and will be investing in the order of \$2.5 million to construct the facility. Once operative, the plant itself will be able to process up to three million cubic feet per day. Initially Omega plans to remove the liquid hydrocarbons (propane, butane and condensate), from the rich raw gas and market them. The feasibility of injecting the remaining dry gas back into the producing formations for enhanced recovery purposes, storage and possible future production and sale is also being studied.

Mr. Parasiuk stated that once the plant is in operation, waste will be reduced, all interested parties including the government will benefit from increased revenues, and emissions to the atmosphere will be reduced. The plant will be subject to environmental controls established by the Clean Environment Commission.

15 Brandon Sun — June 28 '83

Gas won't be wasted

The fact a valuable resource like natural gas is being wasted by flaring it away gives most conservation-minded people a case of slow burn.

That's why a development that occurred this month in the new Waskada oil patch gives encouragement to conservationists and residents of southwest Manitoba in general.

That's the news that Omega Hydrocarbons, the biggest player in Manitoba's new oil patch, has been given approval to build a natural gas processing plant.

More than a million cubic feet a day of this gas was being burned off.

In most oil wells, natural gas is also present. Only a small portion is used to power the oil pumps.

The new \$2.5 million facility will be able to process up to three million cubic feet of gas per day.

Initially, the company will break the gas down into its sub-

components propane and butane. The remaining dry gas can be injected back into the formations for enhanced recovery of the crude oil.

If the Waskada oil patch continues to grow, there may be every reason to believe that some of the towns in southwestern Manitoba will be able to look forward to use of natural gas as a heating source.

Despite the many increases consumers have had to pay in this province, natural gas still delivers more BTUs for the dollar than does heating oil or electricity.

The competition would be welcomed by people in these towns and on nearby farms. It is also conceivable for farm people in the southwest to be driving trucks and tractors powered by propane produced from resources located under their own fields.

✓ Diarize for April 1/8
File " Waskada Lower
Amaranth A
Pool "

March 2, 1983

Omega Hydrocarbons Ltd.
630 - 330 - Fifth Ave. S.W.
Calgary, Alberta
T2P 0L4

Attention: Mr. Ed Wyse

Dear Ed:

Re: Waskada Area Gas Production

It has recently been indicated to the writer that total production gas oil ratio from your wells in the Waskada area is approximately 440 SCF/STB ($78.4 \text{ m}^3/\text{m}^3$). Based on analysis of a reservoir fluid sample obtained from the well Omega Waskada 8-26-1-26, the solution gas oil ratio for the Waskada Lower Amaranth pool is approximately 285 SCF/STB ($51 \text{ m}^3/\text{m}^3$). Consequently, we are concerned of the possibility that a substantial amount of excess gas is being produced in the area and that this may have a detrimental effect on crude oil recovery.

To better assess the severity of this possible problem, we request that you submit any gas measurement data that you have, either for individual wells or the entire production system.

Yours sincerely,

Original Signed by
L. R. DUBREUIL

L. R. Dubreuil
Chief Petroleum Engineer
Petroleum Branch

LRD/sb

Suspect ordered examined

QUEBEC (CP) — A 39-year-old man charged with wounding two people in a sniping incident and then holding police at bay from a house for 25 hours last week was ordered yesterday to undergo a 30-day psychiatric examination to determine if he is fit to stand trial.

Jean-Claude Nadeau was originally ordered to undergo three days of testing when he was arraigned last Friday, but sessions Judge Louis Carrier extended the examination after receiving a preliminary medical report which recommended a longer examination.

The unemployed Nadeau is charged with the attempted murder of Alain Beaulieu, 28, and Josee Belanger, 23, slightly wounded when a sniper walking along a downtown street opened fire with a shotgun last Wednesday morning.

He also faces a third count of attempted murder stemming from shots fired at police.

TEMPO

The best in
entertainment, modern
living, consumer news
Winnipeg Free Press
Home delivery . 957-0550

Clean Environment Commission

The Commission will by order set limits, terms and conditions on the discharge of contaminants to the environment from the following operations and invites public participation in this process by interested or concerned persons who are likely to be affected.

Parks Branch, Tree Protection, Provincial Parks

2673.0

280 Smith Street, Winnipeg, Manitoba R3C 1K2, a proposal to prevent excess defoliation of spruce and balsam fir trees by spraying from vehicle-mounted or airborne equipment using the organic, bacterial insecticide *Bacillus thuringiensis* (Dipel 88 or Thuricide), as necessary at Opapiskow Campground and Dorothy Lake Trailer Village in the Whiteshell Provincial Park, and at selected locations on the Hecla Island road in the Hecla Provincial Park.

Letellier Sanitation Co-op, Inc. Sewage Lagoon

2535.0

c/o P.O. Box 300, Letellier, Manitoba R0G 1C0, a proposal for the operation of a sewage lagoon located in the west end of River Lot No. 133 in the Parish of Ste. Agathe in the Rural Municipality of Montcalm, Manitoba, serving the unincorporated village of Letellier, with discharge of treated effluent via a drainage ditch to the Red River.

Omega Hydrocarbons Ltd., Gas Liquification Plant

2627.0

#630, 330 - 5th Avenue, S.W., Calgary, Alberta T2P 0L4, a proposal for the operation of a plant to produce liquified petroleum gas, located in the NW ¼ of Section 30, Township 1, Range 25 WPM, in the Rural Municipality of Brenda, Manitoba with a potential for gaseous and particulate emissions to the environment.

Anyone likely to be affected by an order issued by the Commission for one of these operations who wishes to make a representation should contact the Commission, in writing, not later than May 31, 1984. Upon receiving this notification the Commission may set a date for a hearing and will notify the persons concerned.

Further information is available from

The Clean Environment Commission
139 Tuxedo Avenue
Winnipeg, Manitoba
R3N 0H6
Telephone: 944-7123



LEASING



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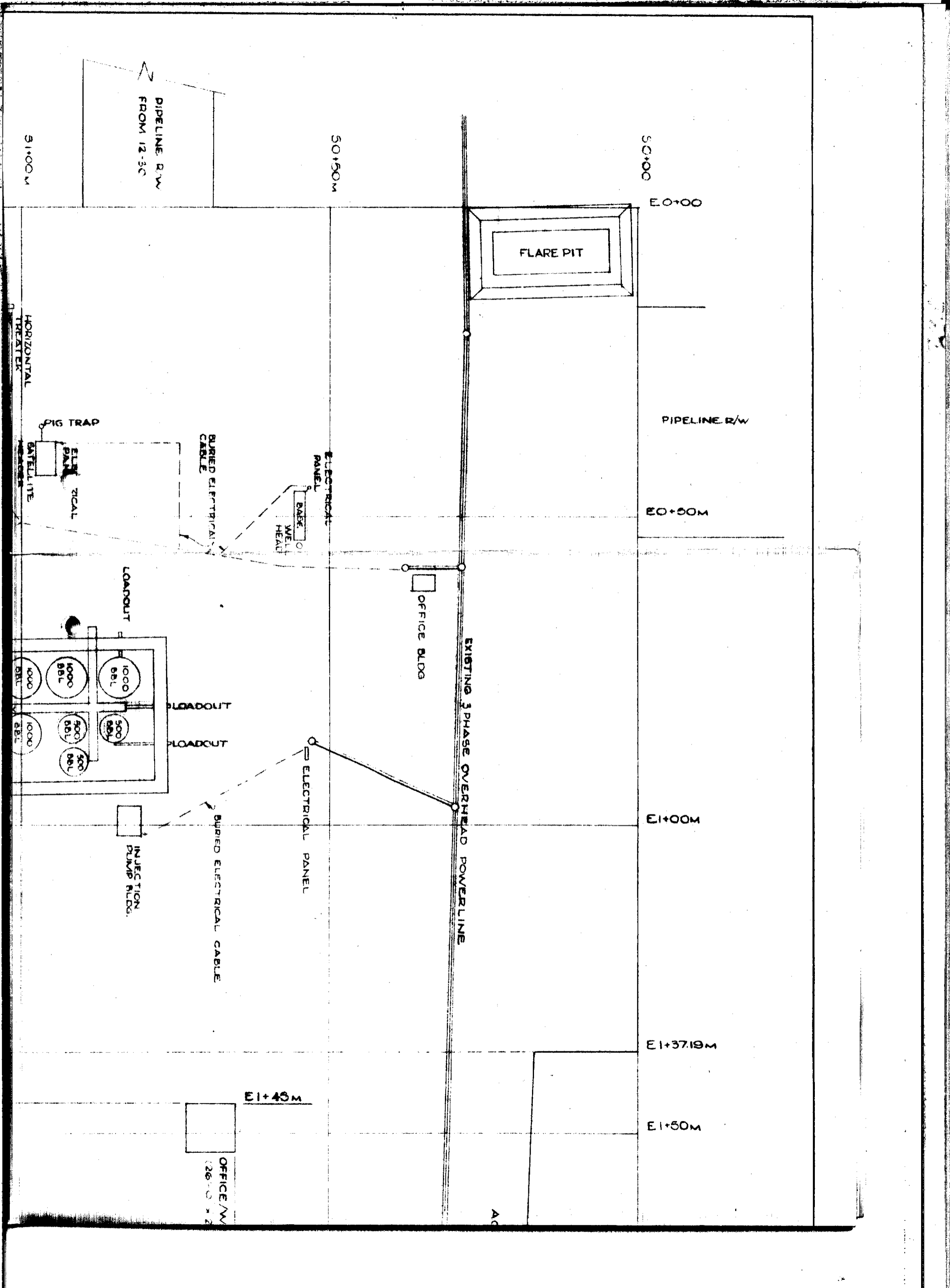
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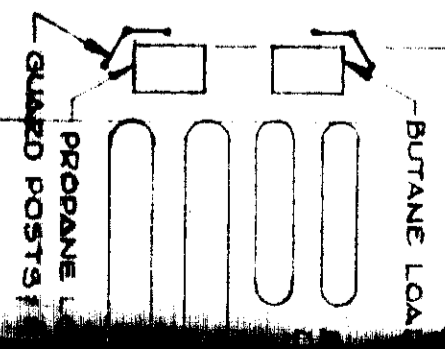
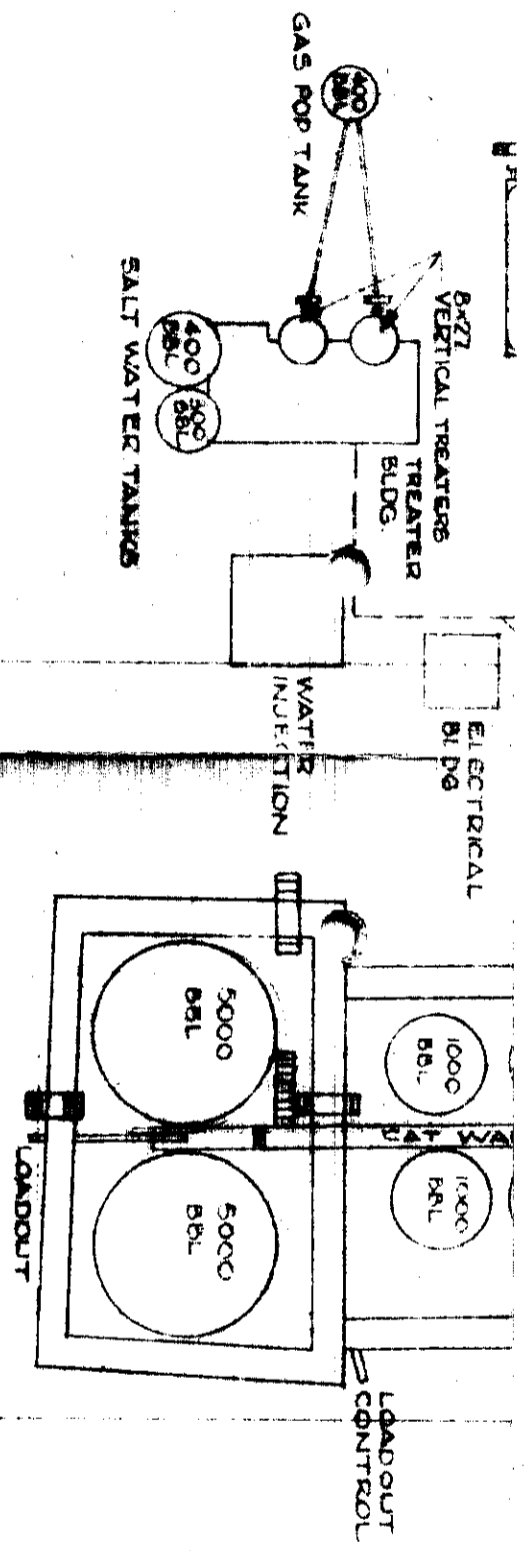
sa
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Hit

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A





51+50M
51+67.60M
BURIED ELECTRICAL
CABLE

PIPELINE R/W
FROM G-30

ACCESS ROAD
TO G-30

FACILITIES EXISTING
TO THIS BOUNDARY



CESS ROAD TO 10-30

E2+00M

E2+50M

E2+65M

E2+05M

E2+30M

50+65M

FRACTIONAL CHILLER BLDG
(2410'x550')

HEATER
BLDG.
(8'0" x 24'0")

50+76M

SWEETENING BUILDING
(22'0" x 42'0")

LIE LINE R/W
FROM 10-30

WAREHOUSE BLDG.
(100'x100')

PROPOSED
BOUNDARY LINE

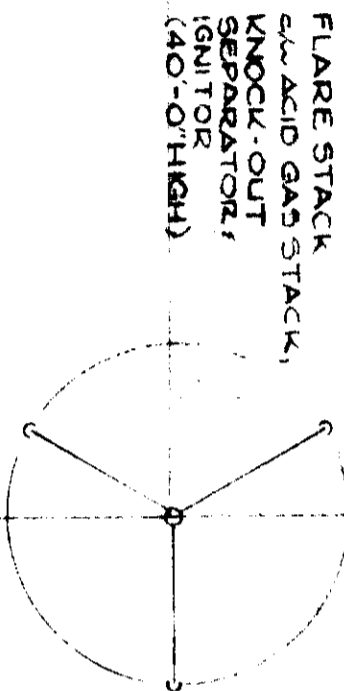
UTANE STORAGE TANK
2-250 BBL(S)

PROPANE STORAGE TANKS
(2-700 BBL'S)

LOADING FACILITIES

$$\frac{U}{\Sigma}$$

COMPRESSES FOR
(30" x 35" O")



FLARE STACK
GAS ACID GAS STACK,
KNOCK-OUT
SEPARATOR,
IGNITOR
(40'-0" HIGH)

New File

WASKADA - OMEGA GAS LIQUIDS
RECOVERY PLANT.

SWINARTON ENGINEERING LTD.

ALBERTA

OMEGA HYDROCARBONS LTD.

WASKADA GAS PLANT
SITE PLAN

LSC 11 SEC 30 TP 1 RGE 25 W.P.M.

DRAW'G. NO.

REFERENCE DRAWINGS

BY _____ NO _____

REVISION

**Or
Z**

▷

ISSUED FOR APPROVAL

DATE _____

[illegible]

1

1:500

10

DEWAIN, SY
Cassius Nickerson
CHAS'D. 6Y

DATE	1003-03	50
APP'D BY		

PROJECT	8514
SCALE	

DRAW'G NO.
D-8314-L-01

REV
A

V-4

SWEET GAS SCRUBBER

V-6

3 PHASE INTERMEDIATE SEPARATOR

V-7

LOW TEMP. SEPARATOR

DE-ETHANIZER

V-12

DEBUTANIZER REFLUX DRUM

E-02

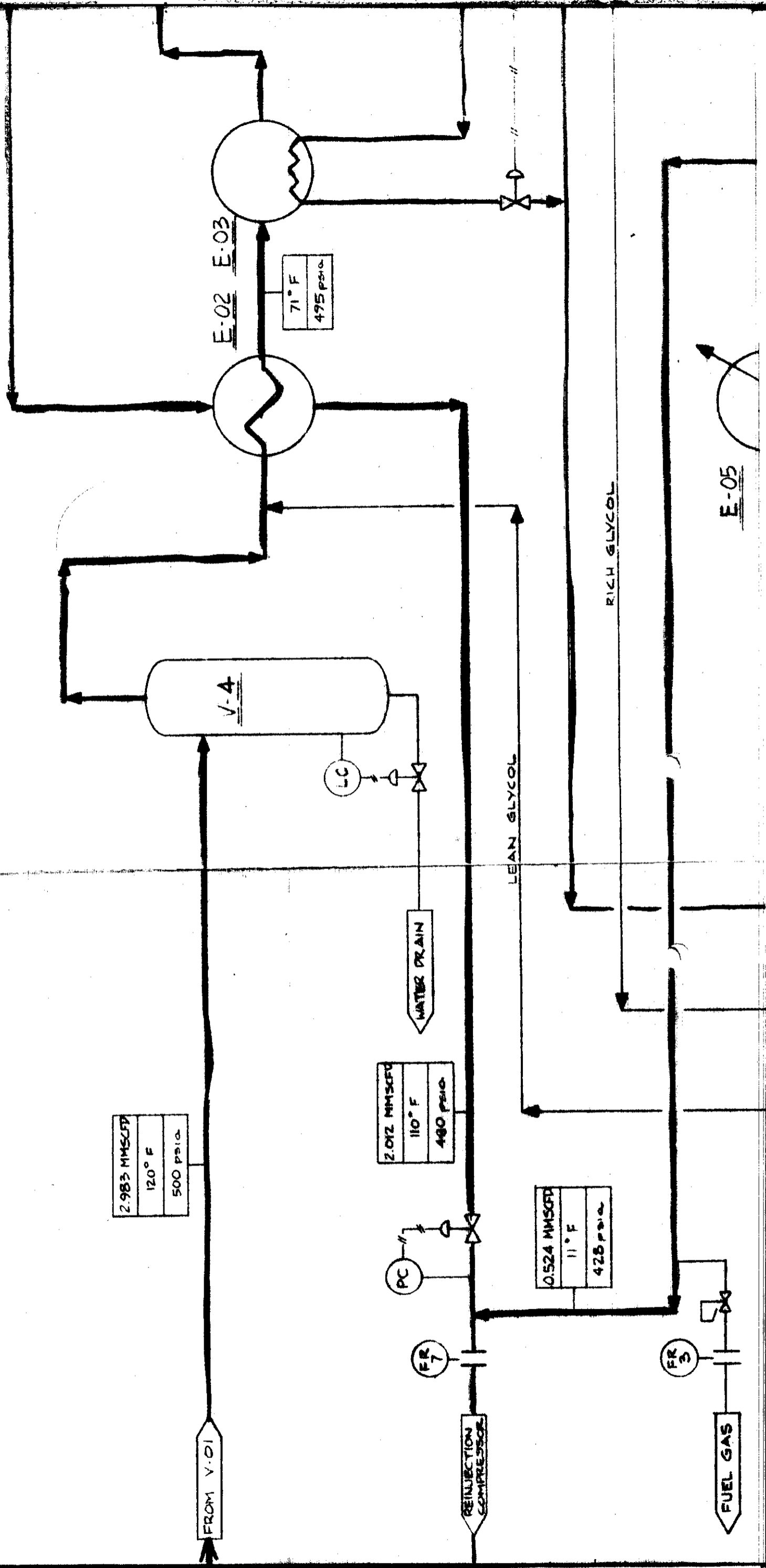
GAS / GAS EXCHANGER

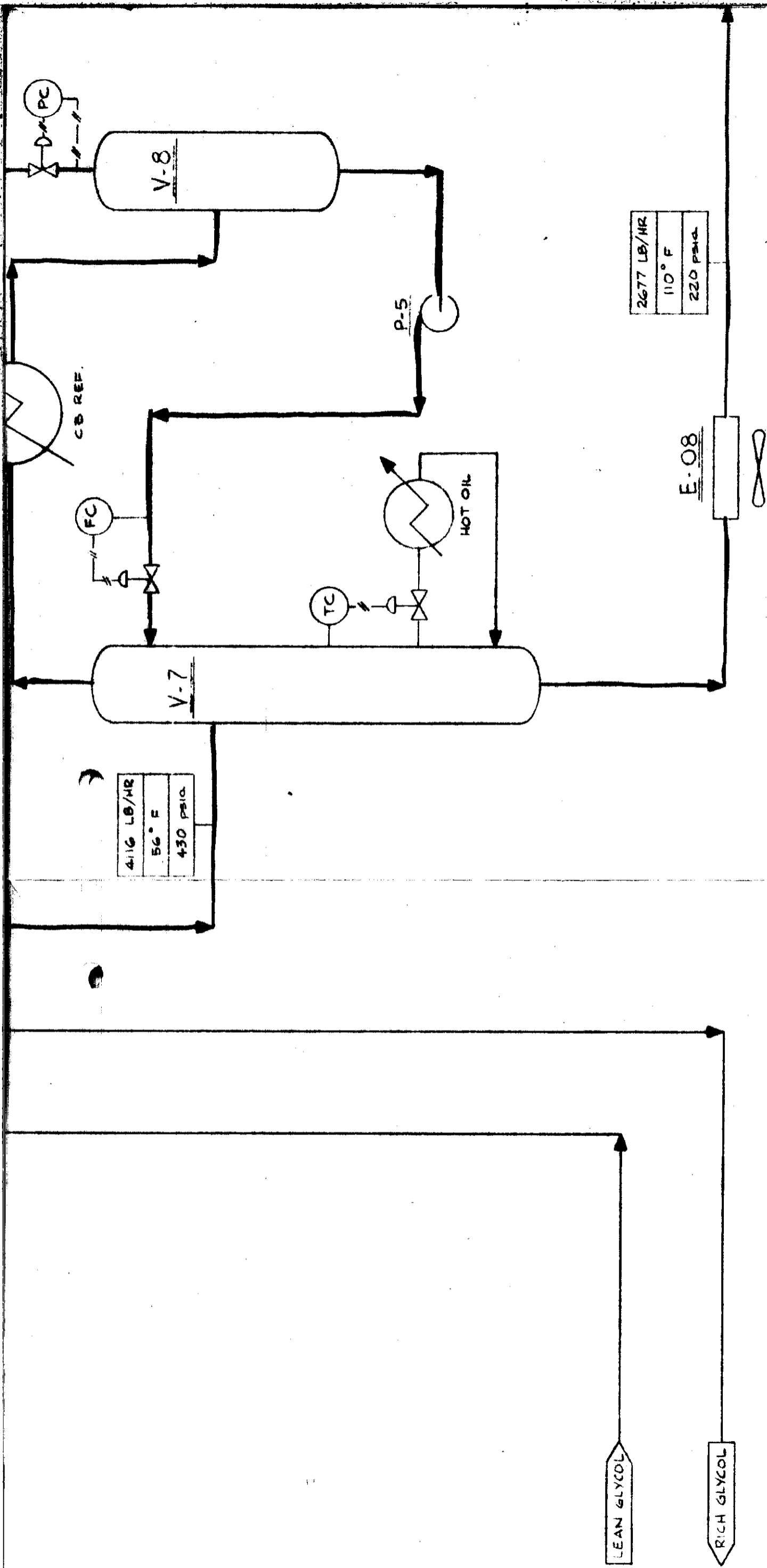
E-03

GAS / LTS LIQUID EXCHANGER

E-04

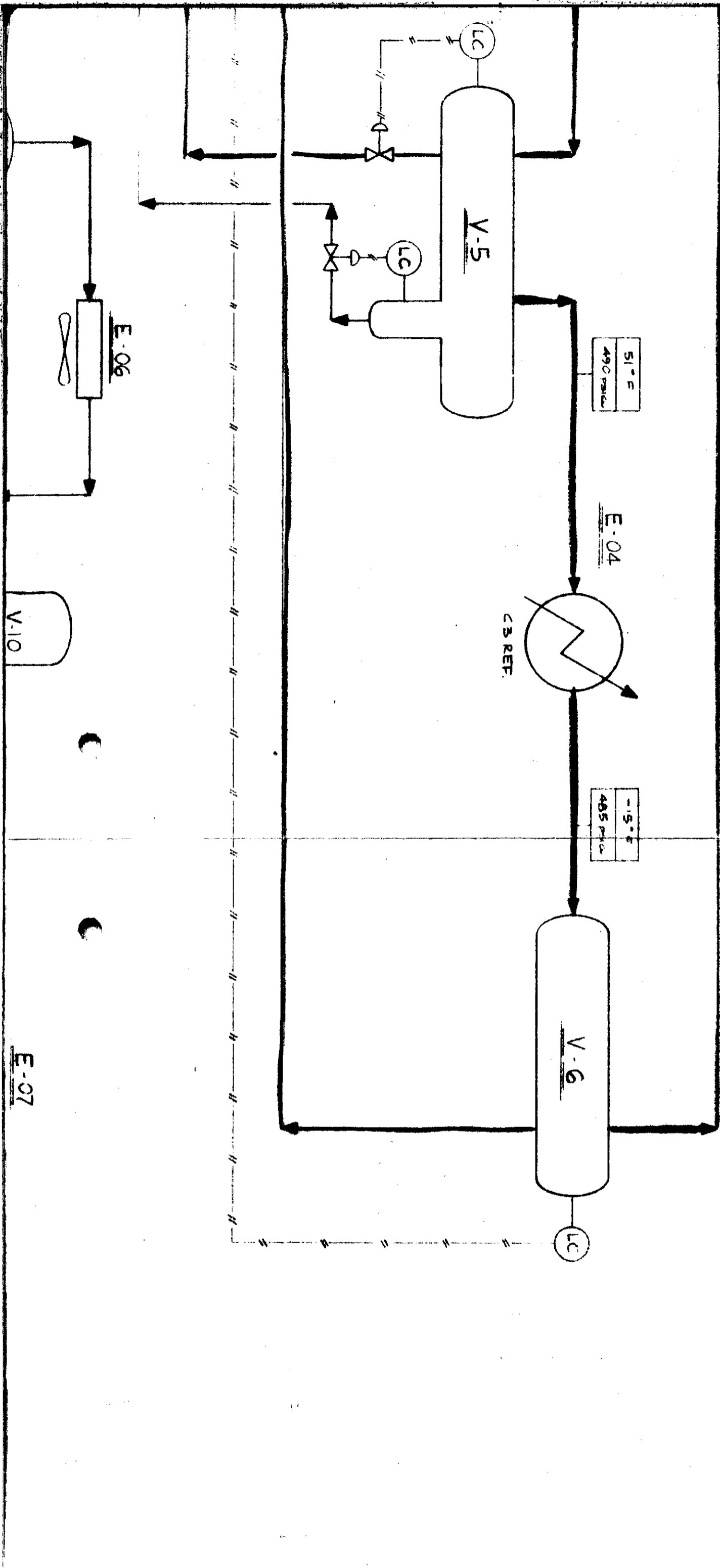
GAS CHILLER





Lower
DEETHANIZER REFLUX DRUM
DEPROPANIZER TOWER
DEBUTANIZER REFLUX DRUM
DEBUTANIZER TOWER

E-05
DEETHANIZER OH CONDENSER
E-06
DEPROPANIZER OH CONDENSER
E-07
DEBUTANIZER OH CONDENSER
E-08
DEETH BOTTOMS COOLER



HT-01

GLYCOL REGENERATION UNIT

C-01

COMPRESSOR PACKAGE

800 HORSEPOWER

3 STAGE

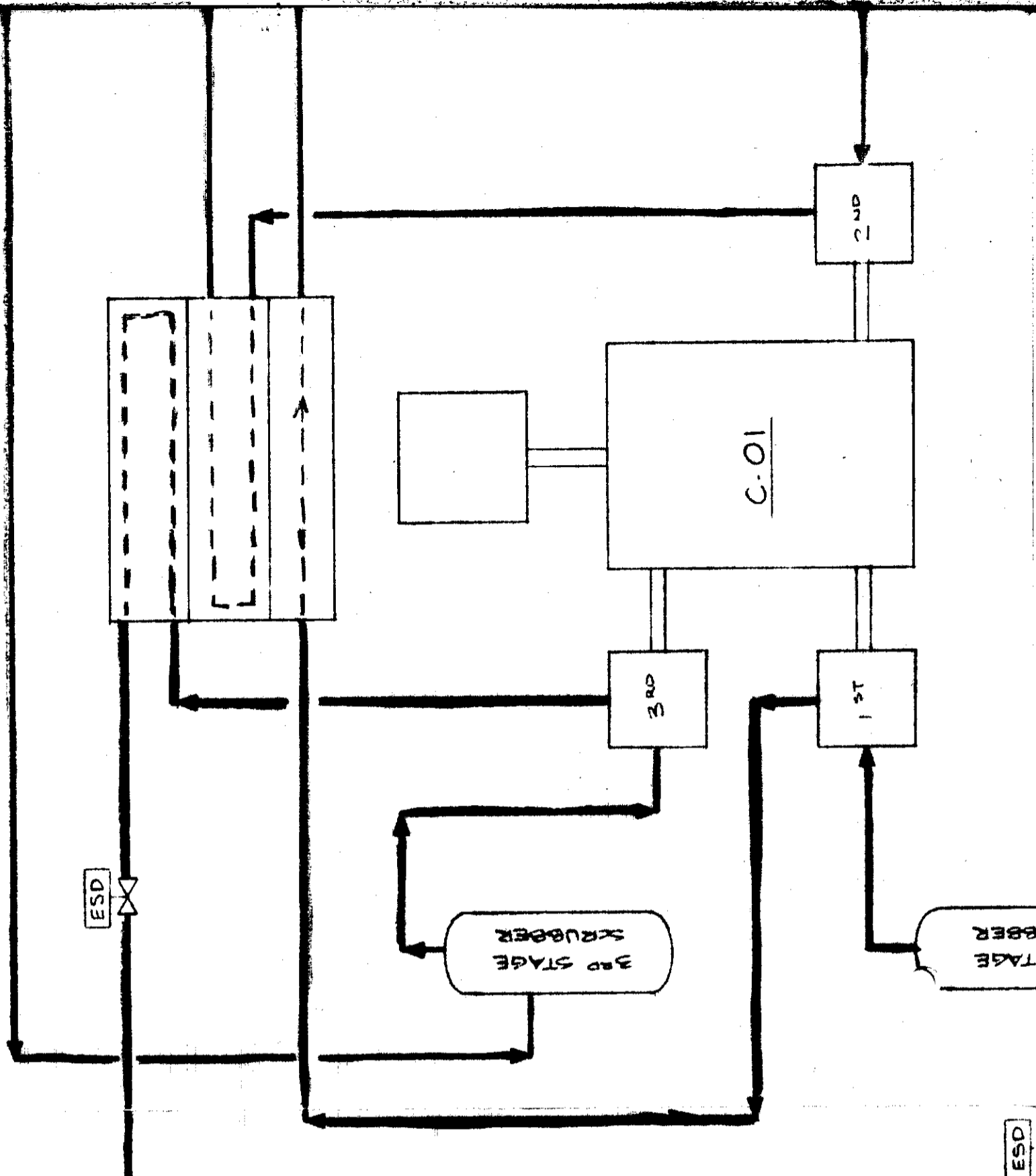
AMIN

2536 MMSCFD
120 ° F
1500 PSIA

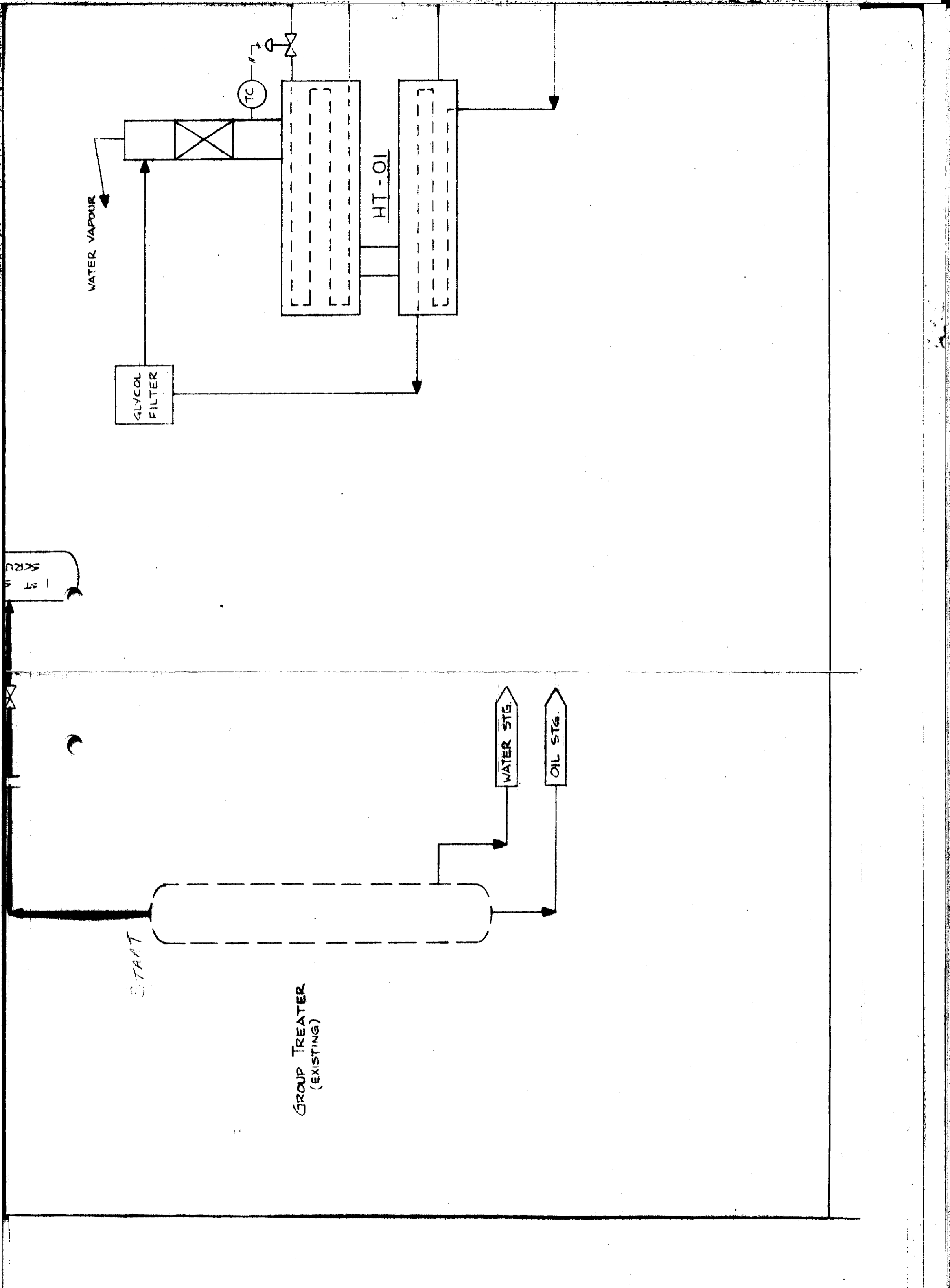
REINJECTION

END

INJECTION
WELL(S)



30 MMSCFD
70 ° F
40 PSIA



V-01
CONTACTOR

E-01
AMINE EXCHANGER

V-02
AMINE STILL

V-03
AMINE REBOILER

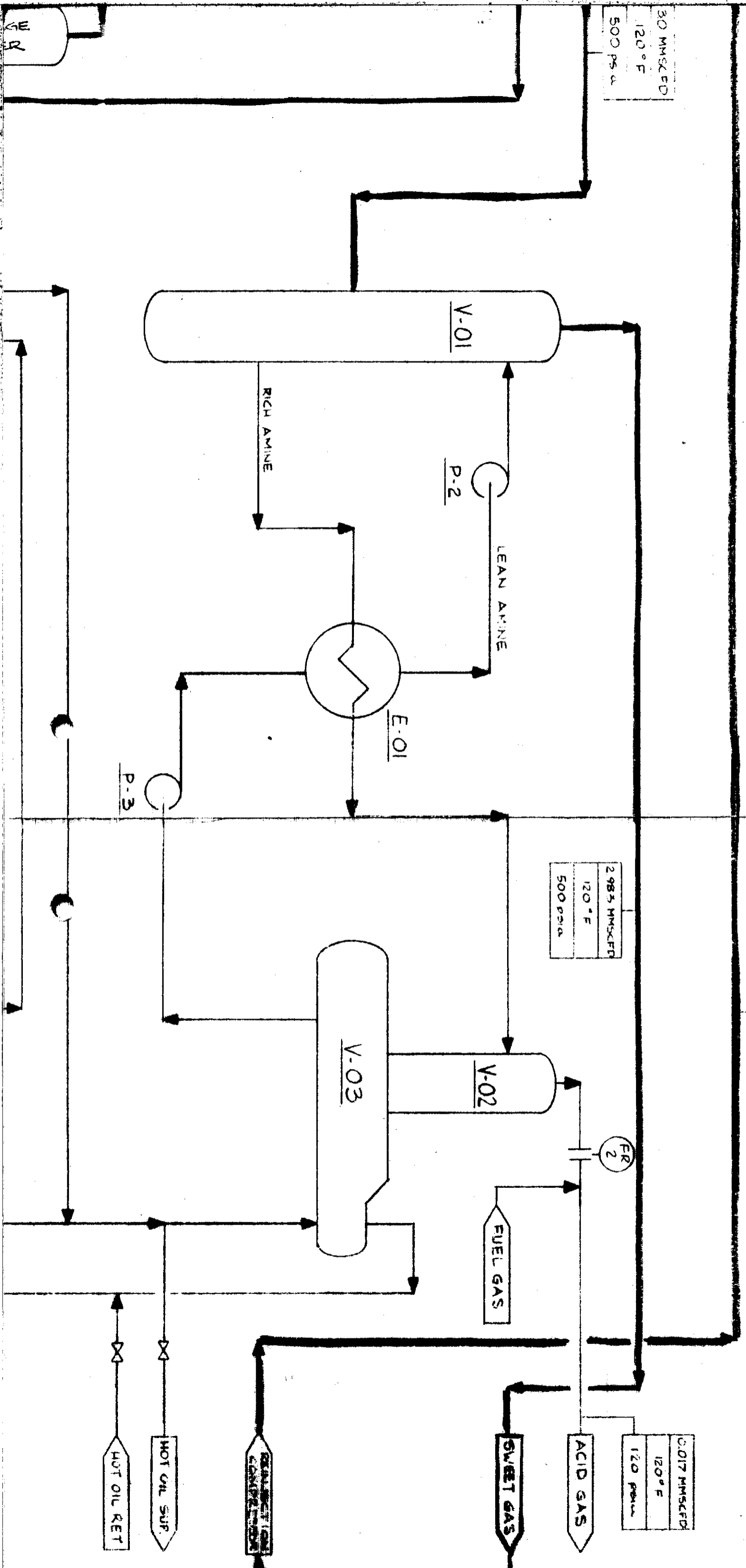
HT-02
HOT OIL HEATER

30 MMSCFD
120 ° F
500 psia

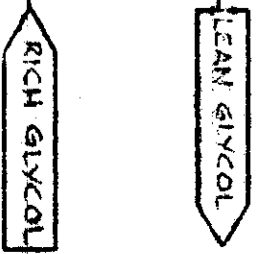
2 985 MMSCFD
120 ° F
500 psia

2536 MMSCFD
62 ° F
428 psia

0.017 MMSCFD
120 ° F
120 psia



2ND
SERIES



RICH GLYCOL

CALGARY ————— **ALBERTA**

OMEGA HYDROCARBON LTD.

WASKADA GAS PLANT
PROCESS FLOW SCHEMATIC

SHEET 1 OF 3

DATE	83-04-07	PROJECT	8314	DWG'G NO	D-8314-F-01
CHK'D BY		SCALE	7/8"		
DESIGNED BY	S. L. MCDONNICK				

REV.

[illegible]

V-13

PROPANE SUCTION SCRUBBER

STV-03

BUTANE STORAGE VESSEL

250 BARREL CAPACITY

C-02

PROPANE COMPRESSOR

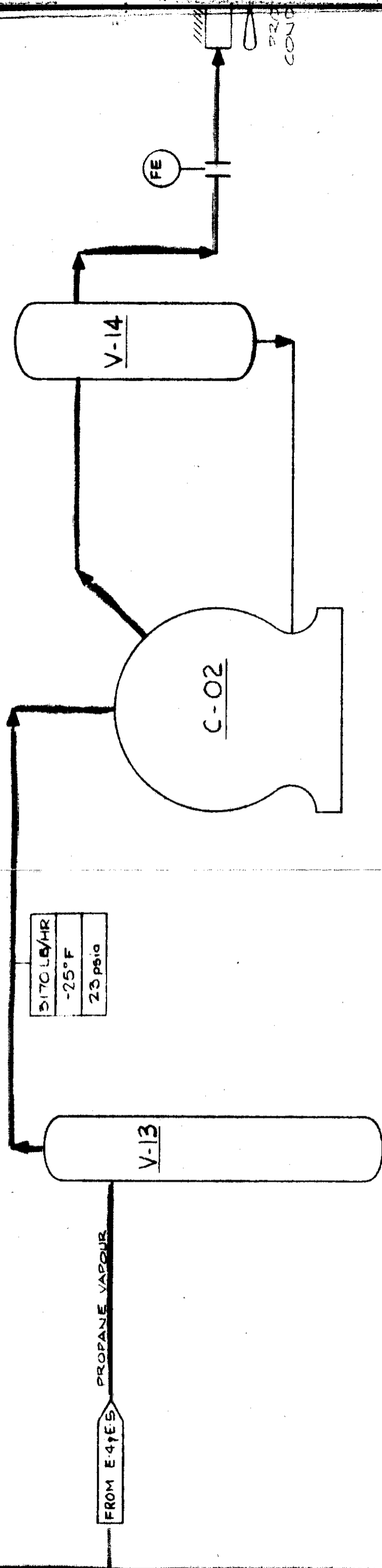
STV-04

BUTANE STORAGE VESSEL

250 BARREL CAPACITY

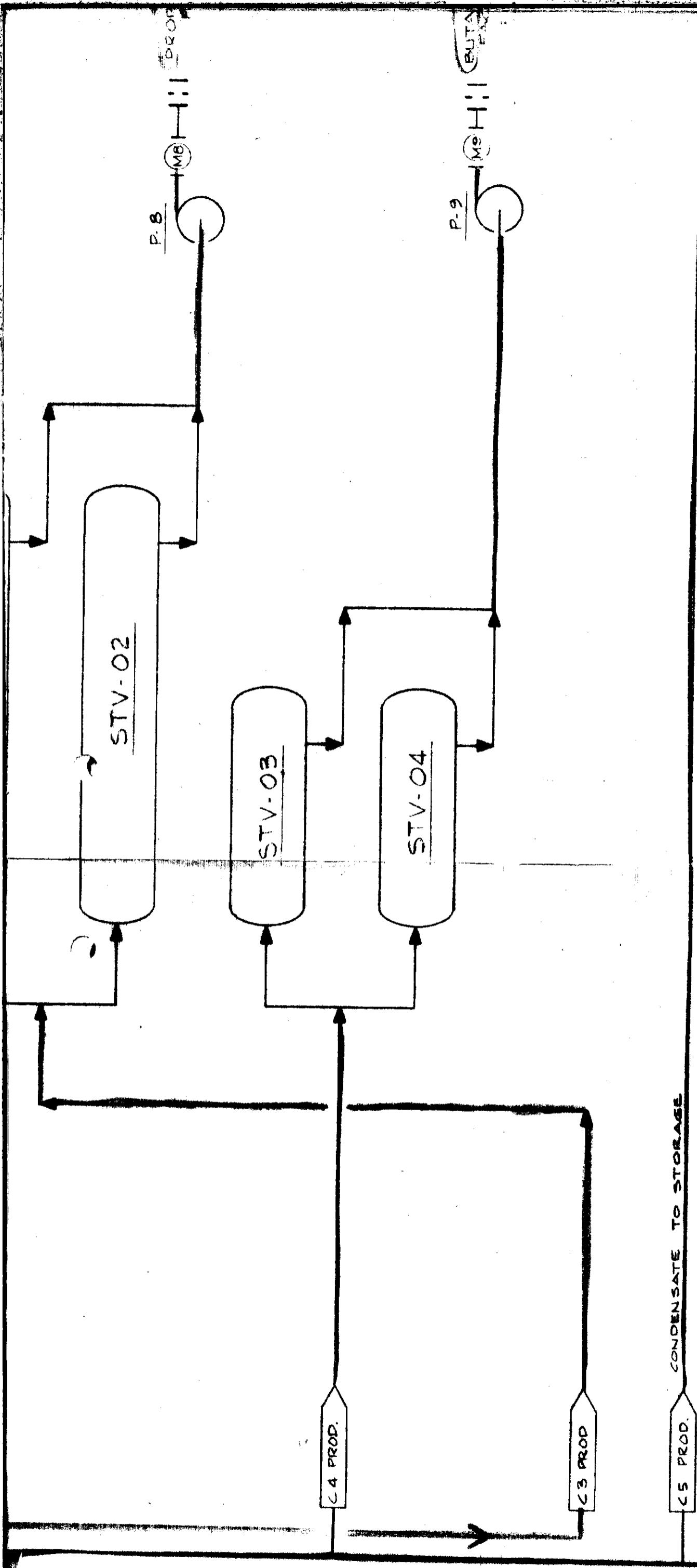
V-14

OIL SEPARATOR



PROPANE REFRIGERANT COMPRESSOR UNIT

STV-01



V-15

PROPANE RECEIVER

STV-01

PROPANE STORAGE VESSEL

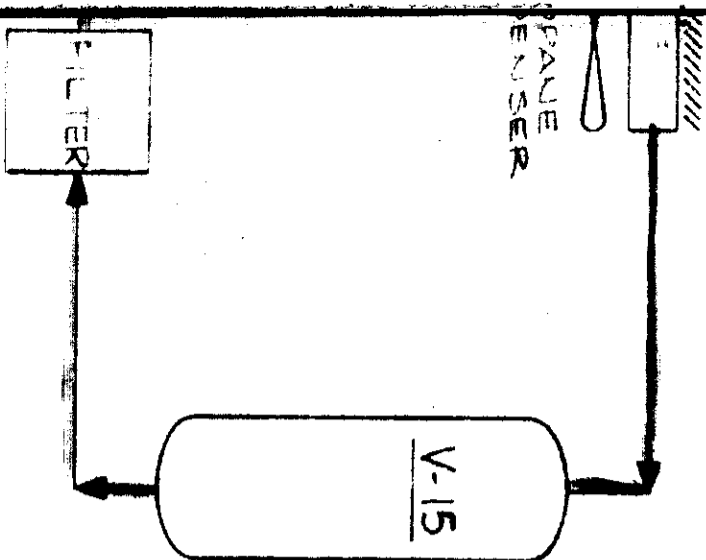
700 BARREL CAPACITY

STV-02

PROPANE STORAGE VESSEL

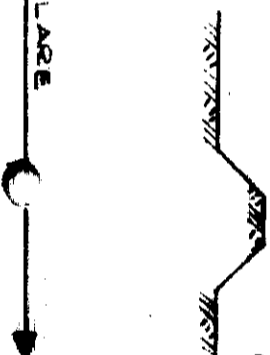
700 BARREL CAPACITY

PROPANE
HEATER



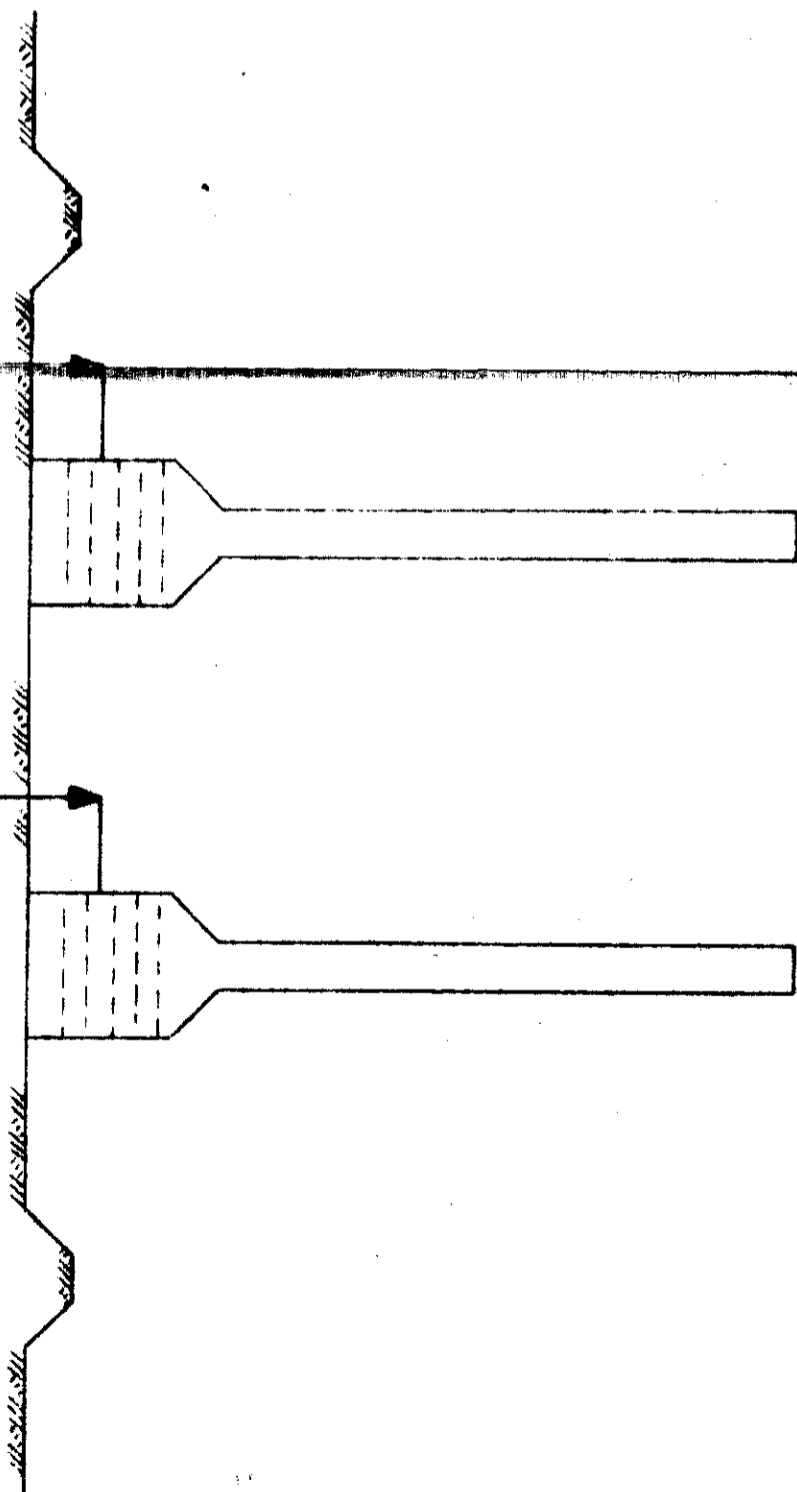
FROM V-2

ACID GAS TO FLARE



ACID GAS
STACK

BLOWDOWN
STACK



WILLIAMSON

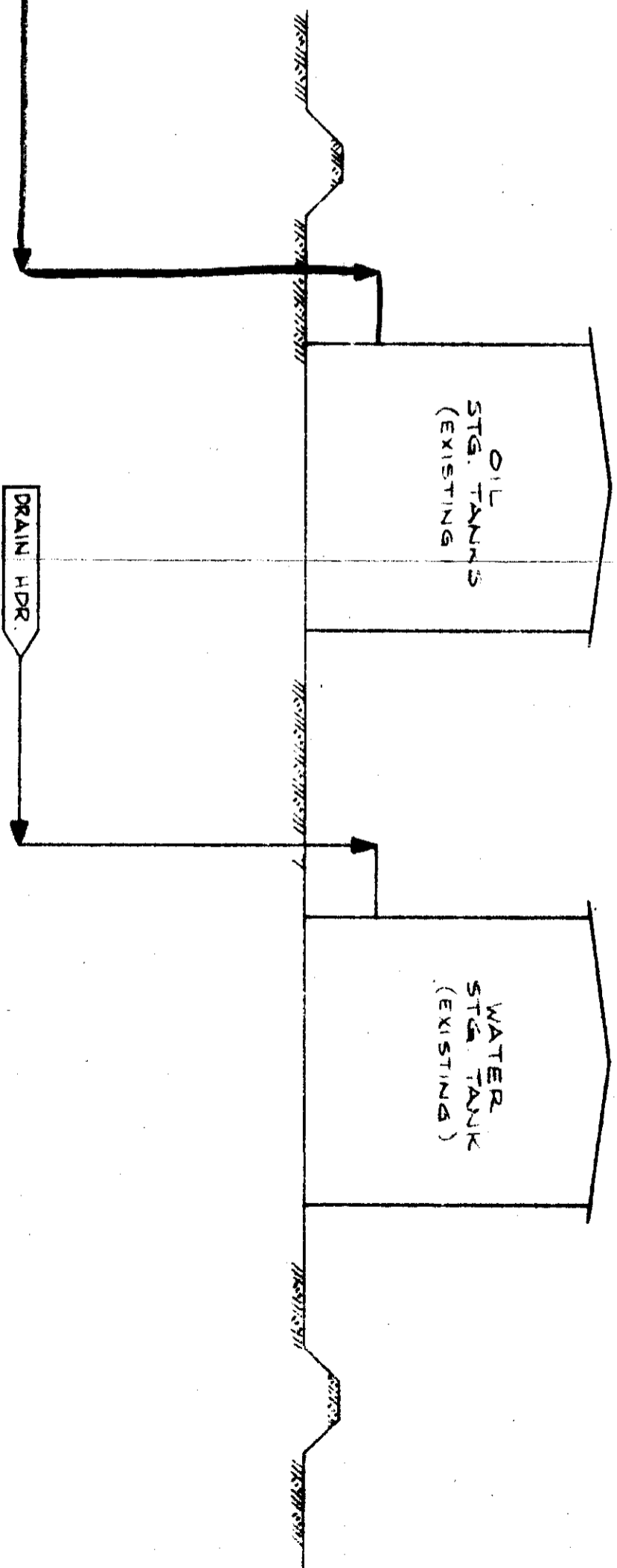


PLATE III

CALGARY

ALBERTA

HYDROCARBON LTD.

WASKADA GAS PLANT PROCESS FLOW SCHEMATIC

STREET
UN
OF
UN

DRAWN BY G.L. MCCORMICK	DATE 83-04-07	PROJECT B314	DWG NO. D-8314-F-03
CHECK BY	APP'D BY	SCALE	

PROJECT

Drug No

●

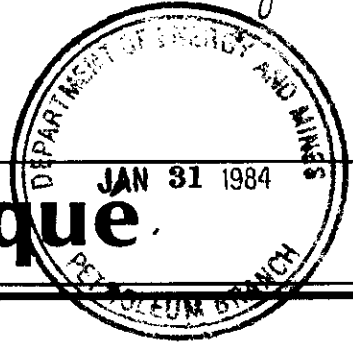


Department of Finance
Canada

Ministère des Finances
Canada

Release

Communiqué



Immediate Release

Ottawa, January 26, 1984
84-10

TAX ON NATURAL GAS AND NATURAL GAS LIQUIDS REDUCED TO ZERO

The Honourable Marc Lalonde, Minister of Finance, today announced a reduction from 15 cents per gigajoule to zero in the rate at which natural gas is taxed under the Natural Gas and Gas Liquids Tax (NGGLT). The reduction will take effect February 1, 1984.

"The reduction to zero in the NGGLT will benefit Canadian consumers of natural gas by helping to ensure stable natural gas prices during 1984. The reduction will also make possible increased payments to natural gas producers without raising prices paid by consumers," Mr. Lalonde said.

This latest reduction in the NGGLT is the third since February 1, 1983, when it was reduced from 63 cents per gigajoule to 45 cents per gigajoule. On August 1, 1983, the federal government reduced the NGGLT from 45 cents per gigajoule to the current level of 15 cents per gigajoule.

"The federal government's decision to lower the tax rate to zero is in keeping with the amending agreement on energy pricing signed on June 30, 1983, by the Honourable Jean Chrétien, Minister of Energy, Mines and Resources, and the Honourable John Zaozirny, Alberta's Minister of Energy and Natural Resources. It is also the fulfillment of the government's commitment, set out in the September 1, 1981 energy agreement with Alberta, to keep the wholesale price of natural gas at 65 per cent of the refinery gate price of crude oil in Toronto," Mr. Lalonde said.

.../2

Canada

Ottawa, Canada K1A 0G5
613 992-1573

The Minister also announced that, consistent with the new rates on natural gas, and also effective February 1, 1984, tax rates per cubic metre for natural gas liquids will be lowered to the following levels:

	<u>Current</u>	<u>New Rate</u>
Ethane	\$2.80	0
Propane	\$3.80	0
Butanes	\$4.25	0

During the fiscal year 1982-83, the government collected \$1.3 billion in NGGLT revenues. Revenues from this source are now expected to be about \$430 million in fiscal year 1983-84.

For further information contact:

N. LePan, Director
Corporate and Resource Tax Analysis
(613) 992-1540

→ Bob
2. 2. 16
PS-1-25

MANIT^{BA}

Inter-Departmental Memo

To
Marc Eliesen
Deputy Minister
Department of Energy & Mines

Date January 9, 1984
From Ian Haugh
Assistant Deputy Minister
Mineral Resources Division

Subject OMEGA HYDROCARBONS LTD. - NATURAL GAS PLANT
Telephone

As of January 5th, Omega informed our inspector in Waskada that there was a minor amount of electrical work still to do and that Omega would likely try for initial start-up this week. Assuming normal start-up problems, smooth operation may not be attained until the end of the month.

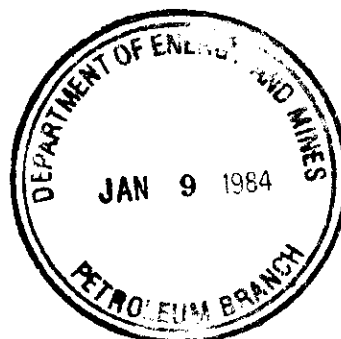
With the construction phase now largely completed, any further insistence on Manitoba content would be after the fact. Omega's figures are too general to determine whether the Company could have involved a greater number of Manitobans in the project, and we could ask for a more detailed breakdown, as well as more information on recruiting efforts made by Omega. However, it may be better to use this experience as a guide for future projects, e.g. the Waskada-Cromer pipeline, and request that the Department of Employment Services more actively pursue Manitoba content.

CREATED
IAN HAUGH

Ian Haugh.

IH/ra

bc: Petroleum Branch



DATE: January 3, 1984

MANIT^{BA}

TO: H. Clare Master

RE: Omega Hydrocarbons -
Natural Gas Plant ← file ②

FROM: Ian Haugh

Dept.:

Branch:

Address:

Telephone:

☐ Take action

☐ Circulate

☐ Per your request

☐ See me re attached

☐ Call me on this matter

☐ For your information

☐ Investigate and report

☐ Supply data for my reply

☐ For your revision
or approval

☐ Reply direct
with copy to me

☐ Return with comments
or recommendations

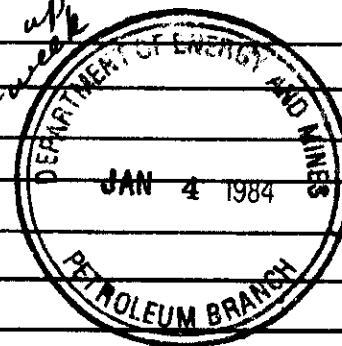
☐ Draft reply
for signature of:

COMMENTS:

Please determine state of completion of
plant and estimated start-up date.

Do you have any comments on Jack Hall's
letter?

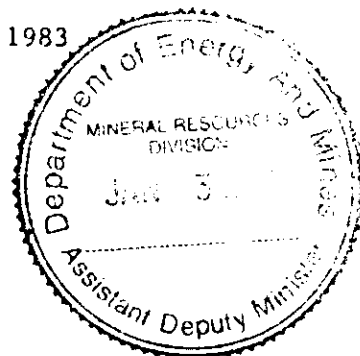
*Virtually
complete
try to
start
next week*





December 19, 1983

Mr. Wilson Parasiuk
Minister of Energy and Mines
Winnipeg, Manitoba
R3C 0V8



Dear Mr. Parasiuk:

In reply to your letter of October 28, 1983 regarding the Omega Hydrocarbons natural gas liquids recovery plant and the oil operations we offer the following comments.

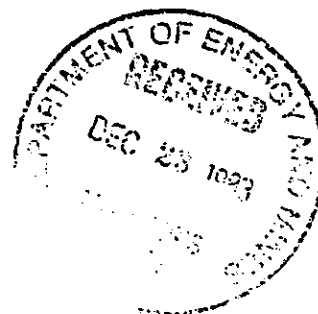
The natural gas plant construction was started in September and we are planning the start up for January or early February of 1984. The construction is still in progress with the mechanical work being 90% complete and the electrical approximately 50% complete. The mechanical and electrical work were contracted to Alberta companies as they are the only firms familiar with construction of a plant of this nature. We did attempt to bid the electrical to a Manitoba company however they declined to bid. While the contractors were from Alberta the majority of the people employed in the construction were from Manitoba. As of this date we have had a total of 44 people working on the mechanical construction, and four on the electrical. The actual local of these people is as follows.

Construction (44 people)

Manitoba	23
Alberta	17
Saskatchewan	4

Electrical (4 people)

Manitoba	2
Alberta	2



The Manitobans were from the general Waskada area as well as from Brandon and Winnipeg. Once the plant is complete we will employ 2 - 3 plant operators. These positions have not been filled but we have ran advertisements in the Brandon and Winnipeg papers with the hope of being able to find suitable trained candidates in Manitoba.

pc - H. Clare Moster
January 3, 1984 - IH/ra

Mr. Wilson Parasiuk
Page 2

Omega Hydrocarbons now operates over 225 oil wells in the Waskada area and employs a staff of 13 to run the wells and office. All but 3 of these 13 are local Manitobans.

It is certainly Omega's policy to hire local people whenever possibly as is evidenced by the high percentage on staff. We have had to train almost all the operators from Manitoba but have preferred to do this rather than bring in experienced people from Saskatchewan or Alberta. We are very pleased with the people we have trained and will continue to hire locally whenever possible.

Yours truly,

OMEGA HYDROCARBONS LTD.



T.J. Hall
President

TJH/cw

OCT 28 1983

Mr. T. J. Hall
President
Omega Hydrocarbons Ltd.
630 - 330 Fifth Avenue S.W.
Calgary, Alberta
T2P 0L4

Dear Mr. Hall:

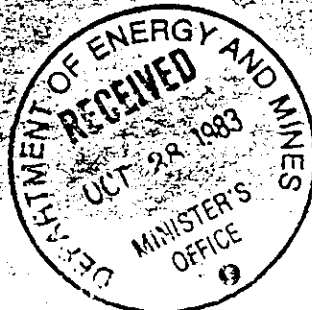
I am very pleased to hear that construction of your natural gas liquids recovery plant at Waskada is now proceeding, recognising as we do that this plant will be of significant benefit to Manitoba.

As you will understand, we are also anxious that there are benefits to Manitobans during the construction phase as well, and in this regard, I have received a number of enquiries from Manitoba trades people asking what opportunities there may be for employment. In order to assist me in responding to these enquiries, I would appreciate receiving a current status report on the project. Particularly, I would be interested in having more information on how much work has been done on the plant to date, how much of this work has been done or will be done by Manitobans, and what Omega's overall practices are with regard to hiring local labour. Information on the completion and start-up dates would also be of interest to me.

Yours sincerely

Original Signed by:
WILSON D. PARASIUK

Wilson Parasiuk



ECM/TH/ra

cc: Marc Eliesen
Ian Haugh
M. Clara Moster

DA . December 5, 1983

MANITBA 

TO: R. Moggey, Director 3354

Employment Standards Branch

Dept. of Labour

Room 609, Norquay Building

FROM: H. Clare Moster

Dept.: Energy & Mines

Branch: Petroleum

Address: 975 Century Street

Telephone:

- | | |
|---|---|
| <input type="radio"/> Take action | <input type="radio"/> Circulate |
| <input checked="" type="radio"/> Per your request | <input type="radio"/> See me re attached |
| <input type="radio"/> Call me on this matter | <input type="radio"/> For your information |
| <input type="radio"/> Investigate and report | <input type="radio"/> Supply data for my reply |
| <input type="radio"/> For your revision or approval | <input type="radio"/> Reply direct with copy to me |
| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |

COMMENTS:

Information on Waskada Gas Plant
per your request through I. Haugh,
Deputy Chairman, The Oil and Natural Gas
Conservation Board.

- > Bob
Has Plant file

- (b) may give such further or other directions as he considers appropriate to counteract the improper or undue maximization.
- (6) Maximization of the amount of any grant to be paid to any person pursuant to section 208 may be regarded by the minister as improper or undue for the purposes of subsection (5) although not otherwise illegal or unlawful.
- (7) A direction of the minister under subsection (5) shall name or designate the person or persons affected thereby, and written notice of the direction shall be mailed or delivered to the person or persons so named or designated.
- (8) Where a direction of the minister has been given under subsection (5), the approved expenditure credit bank and the approved expenditure grant account of any person named or designated in such direction shall be calculated in accordance with such direction, notwithstanding any other provision of these regulations, or any provision of any other statute or regulations."

4 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

SASKATCHEWAN REGULATIONS 188/83

The Oil and Gas Conservation Act Subsection 18.1(1)

Order in Council 1695/83, dated November 23, 1983.

(Filed November 23, 1983)

ORDER

His Honour the Lieutenant Governor in Council, on the recommendation of the Minister of Energy and Mines, pursuant to subsection 18.1(1) of *The Oil and Gas Conservation Act*, makes *The Natural Gas Pricing Amendment Regulations, 1983* in accordance with the attached Schedule.

SCHEDULE

- 1 These regulations may be cited as *The Natural Gas Pricing Amendment Regulations, 1983*.
- 2 Subsection 4(1) of *The Natural Gas Pricing Regulations, 1983* is repealed and the following substituted:

"(1) The price at the fieldgate to be paid by a purchaser of new gas shall be determined in accordance with the following Table:

Daily Well Production (DWP) (10 ³ m ³)	TABLE Fieldgate Price (\$/10 ³ m ³)
Less than 3.00	\$68.770
3.00 to 13.00	$P = \frac{DWP^2 - 26DWP + 335.3}{4.446} + 8.873$
Greater than 13.00	\$46.277

where the Daily Well Production or DWP for a project is determined:

- (a) in the case of wells commencing production prior to July 1, 1980, for the 12 month period April 1 of any year to March 31 of the following year; or
- (b) in the case of wells commencing production on or after July 1, 1980, for the 12 month period July 1 of any year to June 30 of the following year;

according to the following principles:

- (c) a project is constituted by a group of wells which commence production in the same 12 month period April 1 to March 31 or July 1 to June 30, as the case may be, and are within the schedule of lands specified in the gas sales contract;
- (d) the DWP for the project shall be computed at the end of the period in which the wells commence production and shall not change within the life of the wells;
- (e) the DWP shall be determined using the following formula:

$$DWP = \frac{\text{Gas supplied by wells within the project producing new gas}}{\text{Number of producing well-days within the project producing new gas}}$$

3 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

GAS PLANT

From George Patey on Nov. 30/83

mechanical work 90% completed

electrical work should be done by mid January

Omega presently flaring 1.8 MMcf per day
with additional wells tried in close to 2.0 MMcf/d

Plant should recover approx. 60 bbl of liquids per 1 MMcf
(mainly propane)

Therefore presently about 200 bbl of day of
mainly propane and some butane

only 6-10 bbl of pentanes plus

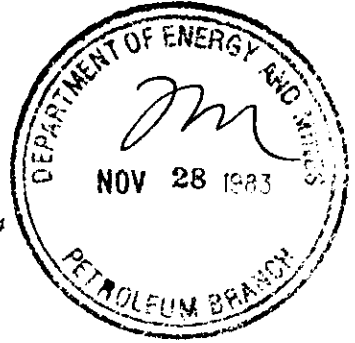
Have no problem in marketing products.



HYDROCARBONS Ltd.

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4



November 23, 1983

→ BOB
please review & provide
comments

Province of Manitoba
Department of Energy and Mines
Mineral Resources Division
989 Century Street
Winnipeg, Manitoba
R3H 0W4

Attention: Clare Moster

Dear Sir/Madam:

Re: Waskada Area, Manitoba
Casinghead Gas Purchase Contract

You are undoubtedly aware of Omega's plans for processing casinghead gas at Waskada, Manitoba. The plant is currently under construction and located near our battery facilities in Lsd. 11-30-1-25. Start-up is expected to take place sometime during the month of January 1984. The plant is designed to handle approximately 3.0 mmcf/d of casinghead gas. Plans call for the production of specification propane and field grade butane, including a small amount of condensate-pentanes plus. The processed natural gas is currently beyond economic reach of a market and it is therefore Omega's plan to inject the dry gas into the tight area of the Spearfish reservoir which is located in Section 13, Township 1, Range 26.

We are enclosing for your review a draft copy of a gas purchase agreement that is intended to cover your interest in lands jointly held with Omega. Any offer beyond Omega operated land will be deferred until after plant start-up. If there appears to be additional capacity for outside operated gas Omega will then extend the contract area to cover such lands.

In the meantime we would appreciate having you review the contract following which we would be prepared to meet with you to review your comments.

If we can be of further assistance please do not hesitate to contact this office.

Yours truly,

OMEGA HYDROCARBONS LTD.


T. J. Hall
President

TJH/gp
Encls.

CASINGHEAD GAS CONTRACT

THIS CONTRACT, dated _____, 1983, between _____, a corporation with offices in Calgary, Alberta, hereinafter called "Seller", and Omega Hydrocarbons Ltd., a corporation with offices in the City of Calgary, in the Province of Alberta, hereinafter called "Buyer" and "Operator".

WHEREAS, Seller has an interest in gas underlying certain lands in the Waskada Field, in the Province of Manitoba, as described in Exhibit "A" attached to this contract, and Seller will have a supply of gas available therefrom and desires to sell such gas to Buyer in the interest of gas conservation; and

WHEREAS, the parties hereto are desirous of entering into a contract for the sale by Seller and the purchase by Buyer of all volumes of Seller's gas; and

WHEREAS, Buyer is proceeding with the construction of gas gathering and processing facilities to serve the area and has already obtained the necessary governmental approvals and permits;

NOW THEREFORE, in consideration of the premises and covenants herein contained and in consideration of the payment by Buyer to Seller of the sum of Ten Dollars (\$10.00), the receipt of which payment is by the Seller hereby acknowledged, Buyer and Seller covenant and agree as follows: -

1. Definitions: The following definitions shall be applicable to this contract. "Gas" means casinghead gas, defined as the gas issuing from oil wells, whether now or hereafter produced by natural forces or by the injection of gas by compressors or by any other means of obtaining the gas. "Day" means a period of 24 hours commencing at 8:00 a.m. "Month" means a calendar month. "Year" shall mean a calendar year.

2. Delivery Point: Gas to be delivered hereunder by Seller shall be at the outlet of the production meter which shall be located at Buyer's battery facilities. Buyer is obligated to provide and maintain all pipe and connections for the transportation of gas from the sales meter or meters. Insofar as Seller's lease permits, Seller grants unto Buyer the right of ingress and egress from the premises at all times for the purpose of installing, operating, repairing, removing facilities and doing any other necessary work. Seller agrees to produce its wells connected to the gathering system at as steady a rate as is reasonably possible so that the supply of casinghead gas delivered to the gathering system will be constant.

3. Reservation of Seller: As said premises are being operated primarily for the production of oil, the taking of casinghead gas by the Buyer shall be subservient to said oil operations. The Seller may, at any time, without liability to Buyer clean out, deepen or abandon any well or wells on the above-described properties, or may use any efficient modern or improved method for the production of oil. Before any well or wells are taken out of service for any reason whatsoever Seller agrees to first shut off the same from communication with the gathering mains. Seller further reserves volumes of gas for use as fuel for lease operations on the lease from which the gas is produced.

4. Meters: Seller shall provide, operate and maintain an orifice meter or meters of a standard type at Seller's casinghead gas wells or lease separators for the measurement of the casinghead gas produced from such wells or separators and delivered into Buyer's gathering system exclusive of lease use and Seller at Buyer's request shall test the accuracy thereof not more than once during each six (6) month period. Buyer shall have the right to be present at any test of the accuracy of any such meter or meters to be made, and Seller shall give Buyer at least ten (10) days prior written notice of such test.

meters
at
satellites?

Seller shall on the 10th day of each month furnish Buyer a report showing the volumes of casinghead gas which have been delivered in the preceding month by Seller into the gathering system. Upon demand being made therefor by Buyer, Seller shall furnish the meter charts evidencing such volumes.

Casinghead gas delivered through Buyers gathering system will be allocated to the well based on the sum of the volumes of casinghead gas prorated to each well or tract during the month calculated on tests carried out by Buyer and agreed to by the Seller.

If, upon test, any metering equipment is found to be in error not more than two (2%) percent in volume at a recording corresponding to the average hourly rate of flow for the period since the last preceding test, previous recordings of such equipment shall be considered correct in computing deliveries hereunder; but such equipment shall be adjusted at once to record correctly. If, upon test, any metering equipment shall be found to be inaccurate by an amount exceeding two (2%) percent in volume, at a recording corresponding to the average hourly rate of flow for the period since the last preceding test, then any previous recordings of such equipment shall be corrected to zero error for any period which is known definitely or agreed upon; but in case the period is not known definitely or agreed upon, such correction shall be for a period extending over the last one-half (1/2) of the time elapsed since the date of the last test.

5. Measurement: The unit of measurement of gas hereunder shall be 1,000 cu metres (10^3m^3) of gas at a base pressure of 101.325 kPa and at a temperature of 15.56 degrees Celsius (15.56°C). It will be assumed that the gas will be at 15.56 degrees Celsius (15.56°C) temperature unless measured by recording thermometer to be installed by Buyer. Atmospheric pressure will be assumed to be 101.325 kPa irrespective of the elevation of the delivery point above sea level or of variations in barometric pressure. The specific gravity of the gas shall be determined by actual test to be carried out by Buyer so often as Buyer or Seller may from time to time require. The volumes shall be measured in accordance with the methods prescribed in "Orifice Metering of Natural Gas", Gas Measurement Committee

Report No. 3 of the American Gas Association, including the appendix thereto, as published April, 1955, or any subsequent revision thereof acceptable to Buyer and Seller. Correction shall be made for deviation of the gas from Boyles Law at the pressure and temperature at which the gas is metered for gas metered in excess of 100 psia.

should have consistent pressure units

6. Delivery Pressure: Either Buyer or Seller shall have the right to shut off and remove its facilities at any delivery point which in their opinion cannot be operated profitably because of the incapability of Seller's wells to produce gas against existing line pressure. Buyer shall not be obligated to maintain a pressure in its gathering system at the delivery point of less than 50 psig.

ie. gas from other batteries would have to be repressured.

7. Quantity: Subject to the other provisions hereof Seller shall sell and deliver to Buyer and Buyer shall endeavour to purchase and receive the full quantity of gas which is available for sale from the lands described in Exhibit "A", but, conversely the amount of gas which Buyer will be able to purchase and receive hereunder will vary from time to time and will depend upon operating condition of Buyer's pipeline and plant capabilities and facilities, and the requirements of the customer supplied by Buyer's pipeline system. Buyer will use all reasonable endeavours to take and conserve casinghead gas so as to meet Seller's gas conservation obligations under any Board Order. Buyer undertakes to purchase gas preferentially from the Omega operated Area, Waskada Field. In the absence of a Board Order, Buyer will endeavor to purchase gas from the lands covered by this contract ratably with its purchase of gas under other contracts covering other lands located in the same area with respect to gas from the same formation. Furthermore, Buyer reserves the right to purchase and process gas volumes other than casinghead gas.

Should Seller's operations create a condition which in the exclusive judgement of the Buyer makes the taking and utilization of casinghead gas therefrom unprofitable to the Buyer, or should such operations tend to endanger the plant or property of Buyer or the lives of Buyer's employees, then Buyer, at its election, may discontinue taking the casinghead gas from the particular well or wells.

8. Price: The price to be paid for gas purchased and sold hereunder shall be ten (10¢) cents per thousand cubic feet (MCF) based on apportioned residue gas volumes. However, it is further agreed between the parties hereto that the price shall increase to twenty (20¢) cents per MCF for all gas delivered hereunder from and after such time as the total cost of the required gathering system, compressors, plant and other facilities plus operating expense and interest have been recovered by Buyer. The casinghead gas facilities commence at the outlet of Buyer's battery and treating facilities and terminate at the point on the plant residue line where title to the gas passes from the plant owners to Buyers' re-injection facilities or to the purchaser of the residue gas. The casinghead gas portion of the gathering system investment shall be that portion serving only the casinghead gas. The casinghead gas portion of the compression investment shall be its proportionate share of the total horsepower capacity required to handle all gas compressed. The casinghead gas portion of the plant investment which includes all items of investment with the exception of gathering shall be one hundred (100%) percent of the total cost thereof.

Earnings and expenses attributable to payout of the casinghead gas facilities shall be as follows: -

- (a) Liquid product earnings shall be allocated on the basis of test gallons that shall be taken semi-annually on the inlet to the plant.
- (b) Residue gas earnings shall be credited after calculation of product extraction and fuel shrinkage. In the event gas other than casinghead gas is processed in the plant, the fuel required for processing shall be allocated according to inlet volumes. The fuel required for compression shall be allocated according to inlet volumes and the number of stages required to deliver residue gas to residue gas purchaser.
- (c) Plant expenses shall include operating labor and supplies, overhead at two (2%) percent of the investment, depreciation at ten (10%) percent of the investment, interest at the rate of Buyer's prime bank rate plus two (2%) percent of the undepreciated investment, all direct taxes and insurance. In the event that gas other than casinghead gas is processed in the plant, all expenses shall be in proportion to the allocated investment. Any lessor royalty expenses that may be paid by Operator may be charged as a plant expense.

Annual statements shall be furnished Seller showing earnings and expenses attributable to payout of facilities.

9. Billing and Payment: Payment for said gas shall be made monthly on or before the 25th day of the month following the one during which the gas was delivered.

Seller shall pay to the lessors and royalty owners all amounts and royalties due them on account of all gas produced and delivered hereunder.

10. Warranty of Title: Seller in and by these presents does not convey, purport, promise or agree to convey any better title in and to the gas herein contracted for or referred to than the title therein and thereto which Seller now has or is entitled under the leases to acquire, and subject thereto, Seller warrants that it has full right and authority to enter into this contract, that all of the leases are in full force and effect and are capable of being maintained and will be maintained by Seller in full force and effect pending commencement of actual delivery of gas hereunder, that all such gas is owned and will be maintained by Seller free from all liens and adverse claims.

Seller shall at all times have the obligation to make settlements for all royalties and overriding royalties due and payments to the mineral and royalty owners under the leases in accordance with the terms thereof and to make settlements with all other persons having any ownership or interest in the gas sold hereunder, and Seller agrees to indemnify Buyer and save it harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of adverse claims of any and all persons to said gas or to royalties, taxes, license fees or charges thereon which are applicable before the title passes to Buyer or which may be levied and assessed upon the sale thereof to Buyer. In the event of any adverse claim of any character whatsoever being asserted in respect to any of said gas, Buyer may retain, as security for the performance of Seller's obligations with respect to such claim under this Section, the purchase price thereof up to the amount of such claim without interest until such claim has been finally determined or until Seller shall have furnished bond to Buyer conditioned for the protection of Buyer with respect to such claim.

11. Force Majeure: In the event of either party being rendered unable wholly or in part by force majeure to carry out its obligations under this contract, other than on such party giving notice and reasonably full particulars of such force majeure, to the other party within a reasonable time after the occurrence of such cause relied on, then the obligations of the party giving such notice, so far as they are affected by such force majeure shall be suspended during the continuance of any inability so caused, but for no longer period, and such cause shall so far as possible be remedied with all reasonable dispatch.

The term "force majeure" as employed herein shall mean acts of Gog, strikes, lockouts, or other industrial disturbances, acts of Queen's enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of the Government, civil and military, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, inability of any party hereto to obtain necessary materials, supplies or permits, and other causes, whether of the kind herein enumerated or otherwise not reasonably within the control of the party claiming suspension. It is understood and agreed that the settlement of strikes or lockouts shall be entirely within the discretion of the party having the difficulty and that the above requirements that any force majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes or lockouts by acceding to the demands of the opposing party when such course is inadvisable in the discretion of the party having the difficulty.

12. Government Orders: This contract and the rights and obligations of the parties hereunder are subject to all present and future laws, rules, regulations and orders of any legislative body or duly constituted authority now or hereafter having jurisdiction.

13. Term: This contract shall terminate March 1, 1984, in the event Buyer has not commenced purchasing gas hereunder by such date. In the event Buyer has commenced purchasing gas hereunder by March 1, 1984 this contract shall be for a period from the date hereof to July 1, 2000, and year to year thereafter until terminated by either party giving to the other ninety (90) days written notice prior to July 1, 2000, or any anniversary of said date.

14. Damage: As between the parties hereto, Seller shall be deemed to be in possession and control of its gas delivered hereunder, and responsible for any damage or injury caused thereby, until the same shall have been delivered to Buyer at the delivery point hereinbefore defined, after which delivery Buyer shall be deemed to be in exclusive possession and control thereof and responsible for any injury or damage caused thereby.

15. Audit: Seller shall, from time to time, and at its sole cost and expense, have the right to audit Buyer's records for the purpose of determining when payout of the facilities actually occurs⁽¹⁾.

16. Successors and Assigns: All the covenants and obligations of this contract shall extend to and be binding upon the heirs, devisees, successors, and assigns of the respective parties hereto and shall be in the nature of covenants running with the land, for the full term hereinbefore set forth. Buyer shall not be considered as notified of any transfer by Seller of any interest in the property referred to herein until Buyer shall have been furnished with the original or certified copy of the instrument evidencing such transfer. The effective date of such transfer shall be considered by Buyer to be the first day of the month following the day Buyer receives such evidence of the transfer.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

ATTEST:

SELLER:

By _____

BUYER:

OMEGA HYDROCARBONS LTD.

By _____

EXHIBIT "A"

To a Casinghead Gas Contract made as of the ____ day
of _____, between _____
_____, as "Seller" and Omega Hydrocarbons Ltd.,
as "Buyer" in the Waskada Field.

Gold seen good inflation hedge

By Chris Smith

Gold is still a good hedge against inflation and should be included in all institutional investment portfolios, a spokesman for the South African gold mining industry said yesterday.

Gold is a financial asset that can be analysed like others and it should be from five to 10 per cent of any large diversified portfolio, said Eugene Sherman, vice president of International Gold Corp., the industry marketing arm.

He said less than five per cent would not have enough impact, and more than 10 per cent would add too much volatility to the portfolio.

The economist and former money manager said gold behaves independently and is a good diversifying unit for investors.

And despite common belief, he said political tension, such as that caused by the recent United States invasion of Grenada, has virtually no impact on gold prices.

Prices may drop briefly at the start of such international crises, but the market is much more sophisticated now and investors realize those tensions are shortlived, Sherman told reporters yesterday. He was here to talk to the Winnipeg Society of Financial Analysts.

Gold prices should be about \$525 (U.S.) an ounce by December, 1984, he

said, if the value of U.S. dollar weakens moderately compared to other currencies.

The U.S. dollar is the key uncertainty in that prediction, he said, and if it remains stable the gold price will be about \$450 (U.S.). Gold was in the \$385 (U.S.) range yesterday.

Gold has to be held for five years or longer, but it is a good investment, Sherman said. He does not anticipate any government moving to a fixed rate for gold, a move which would jeopardize gold investments.

Monetarist economic approaches will continue, he said, and high government deficits will mean excessive expansion of the money supply and resulting inflation. He said gold is needed to maintain buying power during that inflationary period.

Sherman added that North Americans do not have the tradition of holding gold as an investment that Europeans, especially the Swiss do. The threat of military invasion and hyper-inflation made gold a common investment, he said, but those same economic and political conditions did not exist here.

North Americans are starting to buy more gold, however, and Canadians generally are more favorably disposed to gold than Americans, he said. That may be in part because Americans were prohibited from owning gold for more than 40 years until 1975.

Omega builds \$2.5 million Waskada gas refinery

Omega Hydrocarbons Ltd. has started building a \$2.5 million natural gas refinery in the Waskada area of southwest Manitoba.

The plant, which should be finished by the end of the year, will produce propane, butane and condensate from the flare gas now being burned off as a byproduct of oil production, said Jack Hall, president of the Calgary-based resource company.

The refinery will have the capacity to handle three million cubic feet of gas a day, Hall said, but will likely be used for half that amount initially.

The company should have recovered its capital and operating costs for the plant in five years, Hall added in an interview from Waskada.

The refinery will be used for Omega production initially, Hall said, but others will be able to use it if the capacity is available.

Many of the components of the plant and compressor were assembled in Edmonton and trucked to Manitoba

where they are being hooked up, he said.

The plant is very automated and will require only one or two people to staff it, Hall said.

Bank rate holds steady

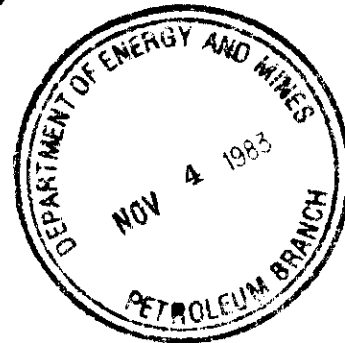
OTTAWA (CP) — The trend-setting Bank of Canada rate remained virtually unchanged yesterday, easing to 9.48 from 9.49 per cent last week.

The fractional shift should not affect other lending levels, including the 11-per-cent rate banks charge their top corporate customers.

The central bank rate, which has hovered in the 9.5-per-cent range since February, is expected to hold steady as long as the jury is out on which direction the economic recovery is going in the United States.

COPY

NOV 03 1983



Mr. Robert H. Glass
Director of Labour Relations
Construction Labour Relations
Association of Manitoba
290 Burnell Street
Winnipeg, Manitoba
R3G 2A7

Dear Mr. Glass:

Thank you for bringing to my attention your concerns over the employment of Manitobans during construction of the Waskada natural gas processing plant.

The gas plant will be the first of its kind in Manitoba and is being built in modular form by a contractor in Alberta experienced in building such plants. The modules will be shipped to Waskada and assembled on site, at which point I understand qualified Manitobans will be given an opportunity to participate in the assembly work. However, I have written to the President of Omega Hydrocarbons Ltd. and I will be pleased to contact you again when I have received specific information from him.

Yours sincerely

Original Signed by:
WILSON D. PARASIUK

Wilson Parasiuk

IH/ra

bc: Marc Eliesen
Ian Haugh
H. Clare Moster

→ B. H.
Gas Plant file

OCT 28 1983

Mr. T. J. Hall
President
Omega Hydrocarbons Ltd.
630 - 330 Fifth Avenue S.W.
Calgary, Alberta
T2P 0L4

Dear Mr. Hall:

I am very pleased to hear that construction of your natural gas liquids recovery plant at Waskada is now proceeding, recognizing as we do that this plant will be of significant benefit to Manitoba.

As you will understand, we are also anxious that there are benefits to Manitobans during the construction phase as well, and in this regard, I have received a number of enquiries from Manitoba trades people asking what opportunities there may be for employment. In order to assist me in responding to these enquiries, I would appreciate receiving a current status report on the project. Particularly, I would be interested in having more information on how much work has been done on the plant to date, how much of this work has been done or will be done by Manitobans, and what Omega's overall practices are with regard to hiring local labour. Information on the completion and start-up dates would also be of interest to me.

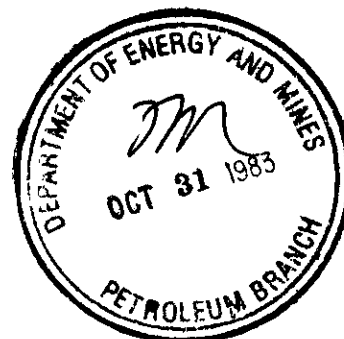
Yours sincerely

Original Signed by:
WILSON D. PARASIUK

Wilson Parasiuk

HCM/IH/ra

bc: Marc Eliesen
Ian Haugh
H. Clare Moster



DATE:

October 27, 1983

MANIT^{BA}

TO:

Ian Haugh

COMMENTS:

Bob -> Gas Plant file

FROM:

H. Clare Moster

Dept.:

Branch:

Address:

Telephone:

☐ Take action

☐ Circulate

☒ Per your request

☐ See me re attached

☐ Call me on this matter

☐ For your information

☐ Investigate and report

☐ Supply data for my reply

☐ For your revision
or approval

☐ Reply direct
with copy to me

☐ Return with comments
or recommendations

☐ Draft reply
for signature of:

PS-f-182 (Transmittal/Route Slip)

DRAFT

October 27, 1983

Mr. Robert N. Glass
Director of Labour Relations
Construction Labour Relations
Association of Manitoba
290 Burnell Street
Winnipeg, Manitoba
R3G 2A7

Dear Mr. Glass:

Receipt of your letter dated October 17, 1983 is acknowledged.

We are looking into your Association's concerns regarding local employment of construction/operating personnel with respect to gas processing plant and will be contacting you after the information is received.

Yours sincerely,

Wilson D. Parasiuk

HCM/lk

Note:

- first gas plant in Manitoba
- modular construction in Alta.
- lack of experienced workforce in Manitoba
- recent serious accident (explosion) in oil patch due to inexperienced laborer (local welder)

DATE: October 26, 1983

MANIT^{BA}

TO: H. Clare Moster

RE: Omega Gas Plant

COMMENTS:

FROM: Ian Haugh

Please draft reply for Minister's signature

Dept.:

Branch:

Address:

Telephone:

☐ Take action

☐ Circulate

☐ Per your request

☐ See me re attached

☐ Call me on this matter

☐ For your information

☐ Investigate and report

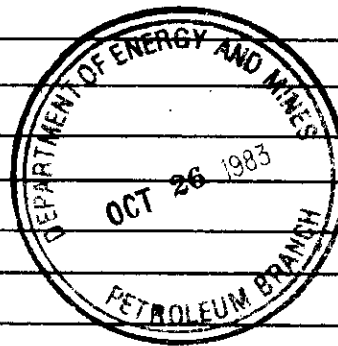
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or approval

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with copy to me

☐ Return with comments
or recommendations

☐ Draft reply
for signature of:



DATE: October 20, 1983

MANIT^{BA}

COMMENTS:

FROM: Office of the Deputy Minister
Department of Energy and Mines
309 Legislative Building
Winnipeg, Manitoba R3C 0V8

TO: Dr. Ian Haugh

Please draft acknowledgement.
Indicate we are investigating situation
with Omega and will be in contact shortly
thereafter.

Telephone:

- | | |
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| <input type="radio"/> Take action | <input type="radio"/> Circulate |
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or approval | <input type="radio"/> Reply direct
with copy to me |
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or recommendations | <input checked="" type="radio"/> Draft reply
for signature of: Minister |

Ian Haugh's Office - Oct. 26/83
p.c. - H. Clare ~~Most~~er

Marc E.



Construction Labour Relations Association of Manitoba

290 Burnell Street, Winnipeg, Canada R3G 2A7 (204) 775-0441

October 17th, 1983.

The Hon. Wilson Parasiuk,
Minister of Energy and Mines,
Province of Manitoba,
450 Broadway Avenue,
Winnipeg, Manitoba.
R3C 0V8.

Dear Sir:

I am writing on a matter of grave concern to our employer members.

We are very disturbed by developments in the southwest Manitoba oil patch. Particularly, the construction of the natural gas processing plant, which sees virtually no employment of Manitobans.

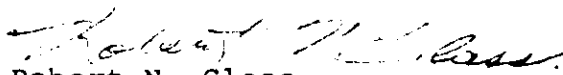
Out-of-province heavy equipment and workmen are evident in the Waskada area in profusion.

At this time of under-employment and/or non-employment of workforce and employers, we question the lack of foresight and influence from your offices to allow such a condition to develop.

We request your immediate consideration to this matter.

We would be willing to meet with you at your convenience to review this important issue.

Yours truly,


Robert N. Glass,
Director of Labour Relations.

RNG/vo

c.c. to:- Building Trades Council
- Operating Engineers # 901.

OCT 18 1983

Norcen Energy Resources Ltd.

PROJECT: Plant in Fort Saskatchewan area, SE3-55-
CAPACITY: Raw inlet gas 30 mmcf/d, dry residue gas 28 mmcf/d, LPG mixed stream C₃ = 500 b/d.
COST: \$10 million.
STATUS: Tenders close Nov. 1, 1983, completion late 1984.

Omega Hydrocarbons Ltd.

PROJECT: Plant in Waskada field, Manitoba, 11-30-1-25WPM.
CAPACITY: Raw inlet gas 3 mmcf/d, dry residue gas 2.3 mmcf/d, propane 200 b/d, butane 85 b/d, stabilized condensate 30 b/d.
COST: \$2.5 million.
CONTRACTOR: Swinarton Engineering Ltd. for design engineering and project management, Thermo Design Ltd. for processing equipment, Alco Gas & Oil Production Ltd. for packaging of 800 hp compressor unit supplied by Lakusta Compression Equipment Ltd.
STATUS: Completion late 1983.

PanCanadian Petroleum Ltd.

PROJECT: Plant in Alderson West field, 6-2-16-15W4.
CAPACITY: Raw inlet gas 3 mmcf/d, dry residue gas 3 mmcf/d.
COST: \$1.6 million.
CONTRACTOR: Wright Technip Ltd.
STATUS: Completed Oct. 15, 1983.

PanCanadian Petroleum Ltd.

PROJECT: Plant in Hussar field, 14/15-1-24-22W4.
CAPACITY: Raw inlet gas 28 mmcf/d, dry residue gas 25 mmcf/d, LPG mix 250 b/d, condensate 280 b/d.
COST: \$3.8 million.
CONTRACTOR: Kenting United Construction Ltd. general, Propak Systems Ltd. for process skid unit, Kenting Oilfield Services Ltd. for construction and installation, Ingersoll-Rand Canada Inc. for 2438 kw compressor unit assembled by E. A. Kutryk Industries Ltd.
STATUS: Completed Sept. 19, 1983.

Petro-Canada

PROJECT: Plant in Brazeau River field, SW31-48-12W5.
CAPACITY: Raw inlet gas 25 mmcf/d, dry residue gas 18 mmcf/d, condensate and NGL mix 4,000 b/d, sulphur 78.4 t/d.
COST: \$35 million.
STATUS: Design engineering in house, ERCB approval Aug. 24, 1983, tenders close early Dec. for EPC contract, completion spring 1985.

Procor Ltd.

PROJECT: Sulphur granulation facility, Procor GX model, at Amoco Canada Petroleum Co. Ltd. Crossfield East plant, 9-14-28-1W5.
CAPACITY: 400 t/d.
COST: \$2 million.
CONTRACTOR: Procor Ltd.
STATUS: Completion mid fall 1983.

Ryerson Oil and Gas Ltd.

PROJECT: Plant in Stanmore field, 11-16-30-10W4.
CAPACITY: Raw inlet gas 3.7 mmcf/d, dry residue gas 3.5 mmcf/d, stabilized condensate 3.5 b/d.
COST: \$810,000.
CONTRACTOR: C I D L Projects Ltd. turnkey, Thermo Design Engineering Ltd. for propane refrigeration package, Waukesha/Worthington for 325 hp compressor.
STATUS: Completed early Sept. 1983.

Shell Canada Resources Ltd.

PROJECT: Plant in Progress field, SE1-78-10W6.
CAPACITY: Raw inlet gas 62 mmcf/d, dry residue gas 53 mmcf/d, LPG mix 1,116 b/d, condensate 930 b/d, sulphur 24 t/d.
COST: \$30 million.
CONTRACTOR: Monenco Consultants Ltd. for environmental program.
STATUS: Awaiting joint venture negotiations before calling construction tenders.

Signalta Resources Ltd.

PROJECT: Expansion of Forestburg plant, 13-14-42-16W4.

CAPACITY: New (previous) raw inlet gas 13 (8) mmcf/d, dry residue gas 13 (8) mmcf/d, compression 1,800 (1,100) hp.
COST: \$3 million.
CONTRACTOR: Signalta general, Pamco Ltd. assembly and installation of Waukesha-Worthington compressor unit.
STATUS: ERCB approved, construction deferred to 1984.

Signalta Resources Ltd.

PROJECT: Heister plant in Forestburg field, 10-31-42-15W4.
CAPACITY: Iron sponge unit 500 mcf/d.
COST: \$100,000.
CONTRACTOR: Signalta general.
STATUS: ERCB approval no. 3888 Sept. 21, 1983, deferred to 1984 for construction.

Voyager Petroleum Ltd.

PROJECT: Plant in Mundare field, 9-28-53-18W4.
CAPACITY: Raw inlet gas 15 mmcf/d, dry residue gas 15 mmcf/d, stabilized condensate 1/3 b/d.
COST: \$200,000.
CONTRACTOR: Swinarton Engineering Ltd. for design engineering, Voyager general, Propak Systems Ltd. for main process unit skid.
STATUS: Completion Nov. 15, 1983.

Western Decalta Petroleum (1977) Ltd.

PROJECT: Plant in Compeer field, 6-26-33-2W4.
CAPACITY: Raw inlet gas 6.5 mmcf/d, dry residue gas 6.3 mmcf/d.
COST: \$500,000.
CONTRACTOR: Quantel Engineering Ltd. general, Presson Manufacturing Ltd. for process and sweetening unit.
STATUS: Completed Sept. 15, 1983.

Keeping Up To Date

The 1983 edition of Price Waterhouse's Oil and Gas Industry in Canada looks at the 1982 annual reports of a number of large companies as the basis for summarizing financial reporting practices. The Survey gives you a special summary of developments and trends in accounting practices in the industry during the past year.

The Survey goes beyond financial statements and also considers the information presented in presidents' and directors' reports. Only those items of financial accounting disclosure specific to the oil and gas industry have been included.

For your complimentary copy of the Oil and Gas Industry in Canada, please contact the nearest Price Waterhouse office or Bernice Grocutt in our Calgary office, (403) 263-3310.

Price Waterhouse
 CHARTERED ACCOUNTANTS

DATE: October 19, 1983

TO: H. Clare Moster

RE: Omega Gas Plant

COMMENTS:

Please draft letter for Minister's signature.

FROM: Ian Haugh

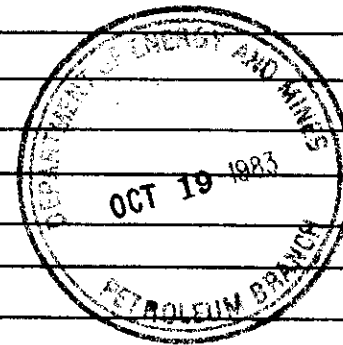
Dept.:

Branch:

Address:

Telephone:

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| <input type="radio"/> Call me on this matter | <input type="radio"/> For your information |
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| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |



DATE: October 14, 1983

MANIT^{BA}

FROM: Office of the Deputy Minister
Department of Energy and Mines
309 Legislative Building
Winnipeg, Manitoba R3C 0V8

COMMENTS:

TO: Dr. Ian Haugh

Please draft letter requesting Omega's
plans on maximizing employment
opportunities re building of gas plant.

Telephone:

- | | |
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| <input type="radio"/> For your revision
or approval | <input type="radio"/> Reply direct
with copy to me |
| <input type="radio"/> Return with comments
or recommendations | <input checked="" type="radio"/> Draft reply letter
for signature of: Minister |

x.c. - H. Clare Moster

October 19, 1983 - IH/ra

Marc E.

MANIT^{BA}

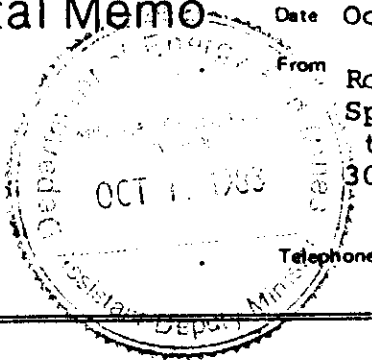
Inter-Departmental Memo

Date October 12, 1983

To Honourable W. Parasiuk
Minister of Energy
and Mines
301 Leg. Bldg.

From Ron Bailey
Special Assist. to
the Hon. W. Parasiuk
301 Leg. Bldg.

Subject OMEGA GAS PLANT



After discussions with Clare Moster regarding the above plant, I am able to provide you with the following information. Various work activity has already been completed on the sight for the gas plant with the piles being driven by an Alberta company called Western Caissons.

Sight preparation including the hauling of gravel, levelling and other activities have been undertaken by local companies and individuals from the Deloraine area.

The major contract for assembly has been awarded to Enerpet Construction Limited of Calgary. I am advised that invitations to bid were sent to seven different companies (six from Calgary, one from Lampram, Saskatchewan).

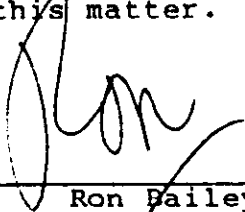
Clare Moster advised me that Enerpet has indicated that they would be attempting to hire local welders and labourers in the assembly process for the gas plant. Clare was given this information via Keith Lowdon who is part of the Petroleum Branch based in Southwestern Manitoba. I believe that Mr. Lowdon obtained this information from Omega staff in Waskada.

Might I suggest that instead of a letter being drafted by yourself or by me in the next few days, being sent off to Omega, it might be quicker and certainly more direct for you to call Omega directly and bring to their attention your concerns regarding local employment content in the construction of the gas plant.

After this has been accomplished, a letter could be forwarded to the gentlemen we met with the other day from the Pipefitters and other unions regarding their concerns in employment opportunities on the gas plant.

I hope that you find this information helpful and I would appreciate your guidance on this matter.

x.c. - H. Clare Moster
October 19, 1983 - ra


Ron Bailey

First Fold

→ 606

October 5, 1983

OMEGA GAS PLANT ← file

Piles	Western Caissons	Alta.
Lease Prep.		Deloraine, Man.
Gravel	Adams Concrete & Gravel	Deloraine, Man.
Gravel Levelling	Jack Jolly	Waskada, Man.
Concrete Forms	Paul Beaudry	Deloraine, Man.
Concrete Supplier	Adams Concrete & Gravel	Deloraine, Man.

Plant modules being manufactured by 20-30 companies in Alberta.

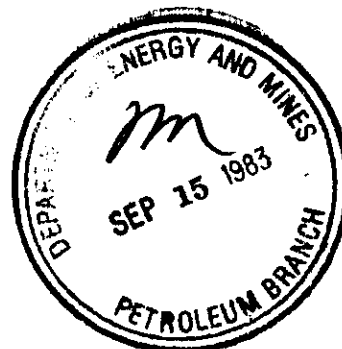
Invitation to bid on the contract to transport, install and assemble modules at Waskada were sent by Omega to 7 contractors (6 in Calgary, 1 in Sask.) and the contract was awarded to ~~Ever~~pet Construction Ltd. of Calgary. Supposedly ~~Ever~~pet's bid indicated it planned to hire local labourers and welders.

(info. obtained by K. Lowden for H. Clare Moster)

→ Col
Omega Gas Plant
file

MANIT^{BA}

DEPARTMENT OF MUNICIPAL AFFAIRS
Municipal Planning Branch
112 — 340 — 9th Street
Brandon, Manitoba
R7A 6C2



September 12th, 1983

Our File No: S-83-14-1671

Omega Hydrocarbons Ltd.
Suite 630, Calgary Place One
330 — 5th Avenue, S.W.
CALGARY, Alberta
T2P 0L4

Dear Sir:

RE: PROPOSAL TO SUBDIVIDE PART OF THE
N.½ Sec. 30-1-25 W.P.M.
R. M. OF BRENDA (TREWIN)

This is to advise you of the Tentative Approval of the proposed subdivision. Final approval and a Certificate of Approval will be issued when you submit the following final requirements:

1. Submit the basic lot fee requirement of \$15.00 per lot for each new lot shown on the plan of subdivision, payable by cheque in favour of the Minister of Finance.
2. Submit evidence that an easement agreement has been provided for Hydro service. Further particulars pertaining to this agreement can be obtained from Ms. N. Poten, Property Department, Manitoba Hydro, Box 815, Winnipeg, Manitoba R3C 2P4.
3. Submit the original and 2 mylar copies of the plan of subdivision/survey for the signature of the Approving Authority. The said plan shall be prepared by a Manitoba Land Surveyor. Due to the diversity of mines and minerals interests for the above property, it is suggested that you consult the Boissevain Land Titles Office in order to ascertain what the characteristics of the plan should be.

Please be advised this approval is valid for 24 months (two years) from the date of this letter. If within this time period you have not met the above conditions your application will be considered closed, unless you have made satisfactory arrangements with this office for an appropriate extension.

Omega Hydrocarbons Ltd.
September 12th, 1983
Page 2.....

Also, be informed that under Section 72(1.1) of The Planning Act you may appeal to The Municipal Board of Manitoba the conditions subject to which your subdivision application has been approved. Any such appeal is required to be lodged within thirty days after the receipt of this letter. If you wish to appeal, you should mail a notice of appeal by registered mail, postage prepaid, to this office and to the Secretary of the Municipal Board at 1234 - 405 Broadway Avenue, Winnipeg, Manitoba, R3C 3L6.

Yours truly,


FOR THE MINISTER OF MUNICIPAL
AFFAIRS

c.c. R. M. of Brenda
Environmental Control Branch
Manitoba Hydro
Department of Energy & Mines, Petroleum Branch✓

September 2, 1983

R. W. Tompkins
Planner
Municipal Planning Branch
112, 340 - 9th Street
Brandon, Manitoba
R7A 6C2

Dear Mr. Tompkins:

Re: Proposal to Subdivide Pt. 1/4 Sec. 30-1-25 WPM

In response to your memo dated August 26, 1983 this is to confirm that Omega Hydrocarbons Ltd. has applied to The Oil and Natural Gas Conservation Board under The Mines Act and the Board has authorized Omega to proceed with construction of a gas liquids recovery plant to be located on the subject land. A copy of the Board's letter dated June 9, 1983 is attached.

Also attached is a copy of a letter dated June 3, 1983 from the Chief, Environmental Control Programs to Omega relating to the same application.

If I can be of further assistance please advise. I would also appreciate being informed if you are aware of any problems pertaining to the proposed project.

Yours sincerely,

Original Signed by H. C. Mester

H. Clare Mester, P. Eng.
Director, Petroleum Branch

HCM/lk

Attachments

b.c. Dr. I. Haugh
Deputy Chairman
The Oil and Natural Gas
Conservation Board

Inter-Departmental Memo

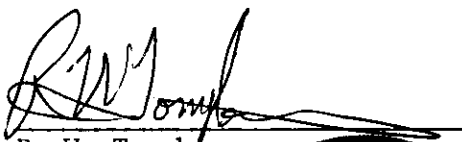
<p>To .</p> <p>n</p> <p>Subject</p>	<p>Clare Moster Petroleum Branch Century Industrial Plaza 989 Century Street Winnipeg, Manitoba R3H 0W4</p> <p>Proposal to Subdivide</p>	<p>Date</p> <p>From</p> <p>Telephone</p>	<p>August 26, 1983</p> <p>R. W. Tompkins Planner Municipal Planning Branch 112-340-9th Street Brandon, Manitoba R7A 6C2</p>
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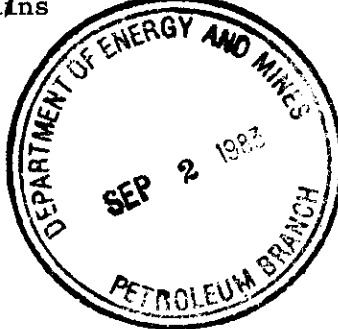
Pt. N. ½ Sec. 30-1-25 W.P.M.
R.M. of Brenda

Further to our conversation of Friday afternoon, please find enclosed a subdivision application submitted by Omega Hydrocarbons for a parcel of land in the above named property.

As we are under some pressure to deal with this proposal, we would request that you review this matter as soon as possible, and advise us of any concerns that you might have. If Omega has all the appropriate clearances from your branch to commence construction at this location, we would appreciate being so advised.

Thank you for your anticipated early attention to this matter.


R. W. Tompkins



First Fold

**APPLICATION FOR
APPROVAL OF SUBDIVISION
Under Part VI of the Planning Act**

Please complete this form and contact the appropriate office (as shown on the map).

PLEASE PRINT (black ink only)

PLANNING OFFICE USE ONLY

File No. 9-83-14-1671
Date Received 83/09/03
Date Accepted 83/08/10

Land Use Control	Compliance		
	Yes	No	Policy No.
B.P.S.			
D.P.			
Z.B.			
P.L.U.P.			

1. APPLICANT

NAME OF PERSON(S) OR FIRM TO WHOM CORRESPONDENCE SHOULD BE ADDRESSED:

Name OMEGA HYDROCARBONS LTD.
Address Suite 630, Calgary Place One, 330 - 5th Avenue S.W.
Calgary, Alberta T2P 0L4 Telephone 403-261-0743
I/We, OMEGA HYDROCARBONS LTD., have been designated by

the registered owner(s) of the subject land to prepare and submit an application for approval of subdivision.

Signature of Registered Owner H. Gordon Trewin Date July 21/83

2. REGISTERED OWNER(S)

Name HOWARD GORDON TREWIN
Address Box 175, WASLADA, MANITOBA
ROM 2E0 Telephone 673-2437

3. CERTIFICATE OF APPROVAL

Certificate of Approval to be issued in the name of _____

OMEGA HYDROCARBONS LTD.

The name(s) shall be the owner(s) of the land at the time of registration.

4. LOCATION & GENERAL DESCRIPTION OF LAND

A) Municipality or Community BRENDA MUNICIPALITY
B) Lot or Parcel _____ Block _____ Plan No. _____ Part of the N $\frac{1}{2}$ of Section 30
Township 1 Range 25 East/West of Principal Meridian
River Lot _____ Parish or Settlement _____

C) DOCUMENTS REQUIRED FROM LAND TITLES OFFICE

Provide Land Titles copy (currently dated) of the certificate(s) of titles, with copies of any certificates transferred out, (or deeds and a copy of the abstract), and copies of any restrictive covenant, easement, right-of-way, or caveat affecting the site.

5. LAND USE (Check ☒ or answer)
- A) At present the site is: cultivated ☒ pasture _____ bush _____ residential _____
other (describe) _____
- P Proposed use of site: residential _____ commercial _____ industrial _____ recreational _____
agricultural _____ other (describe) GAS PLANT AND BATTERY SITE
- C) Are there any existing buildings and or significant physical features on the site? (describe)
NO

6. SERVICES (Check ☒ or answer)

- A) Sewage Disposal: i) Present: sewer N/A septic field _____ other (describe) _____
ii) Proposed: sewer N/A septic field _____ other (describe) _____
- B) Water Supply: i) Present: individual well N/A piped water _____ other (describe) _____
ii) Proposed: individual well N/A piped water _____ other (describe) _____
- C) Garbage Disposal: i) Who will be responsible for the removal of garbage? N/A
ii) Location of waste disposal ground to be used N/A
- D) Roads: i) Does the proposed subdivision front on a road or highway? YES
ii) Is there an existing driveway from the proposed subdivision onto a road or highway? YES
iii) Do you propose to make new driveway(s) onto a road or highway? NO
iv) The road is an existing Provincial Trunk Highway _____ Provincial Road _____
Municipal Road _____
- E) Drainage: i) How will the proposed subdivision be drained? ditches ☒ storm sewer _____
curb & gutter _____ natural ☒
ii) Has this site ever been flooded? NO What years? _____
iii) Is it subject to ponding from local run-off? NO
iv) Do you propose to discharge surface water into a provincial highway ditch? _____
a provincial waterway? NO. Show drainage patterns, connections on your sketch (Number 10).

7. ADDITIONAL INFORMATION

You may be requested to provide additional information, such as topography, surface and subsurface drainage, surveyor's sketch, etc.

8. ADDITIONAL COMMENTS

Please indicate the reason(s) for making this application and any other comments you believe are relevant:

PROPOSED GAS PLANT AND ACCESS. APPROX. 14 ACRES TO
BE USED FOR PLANT SITE.

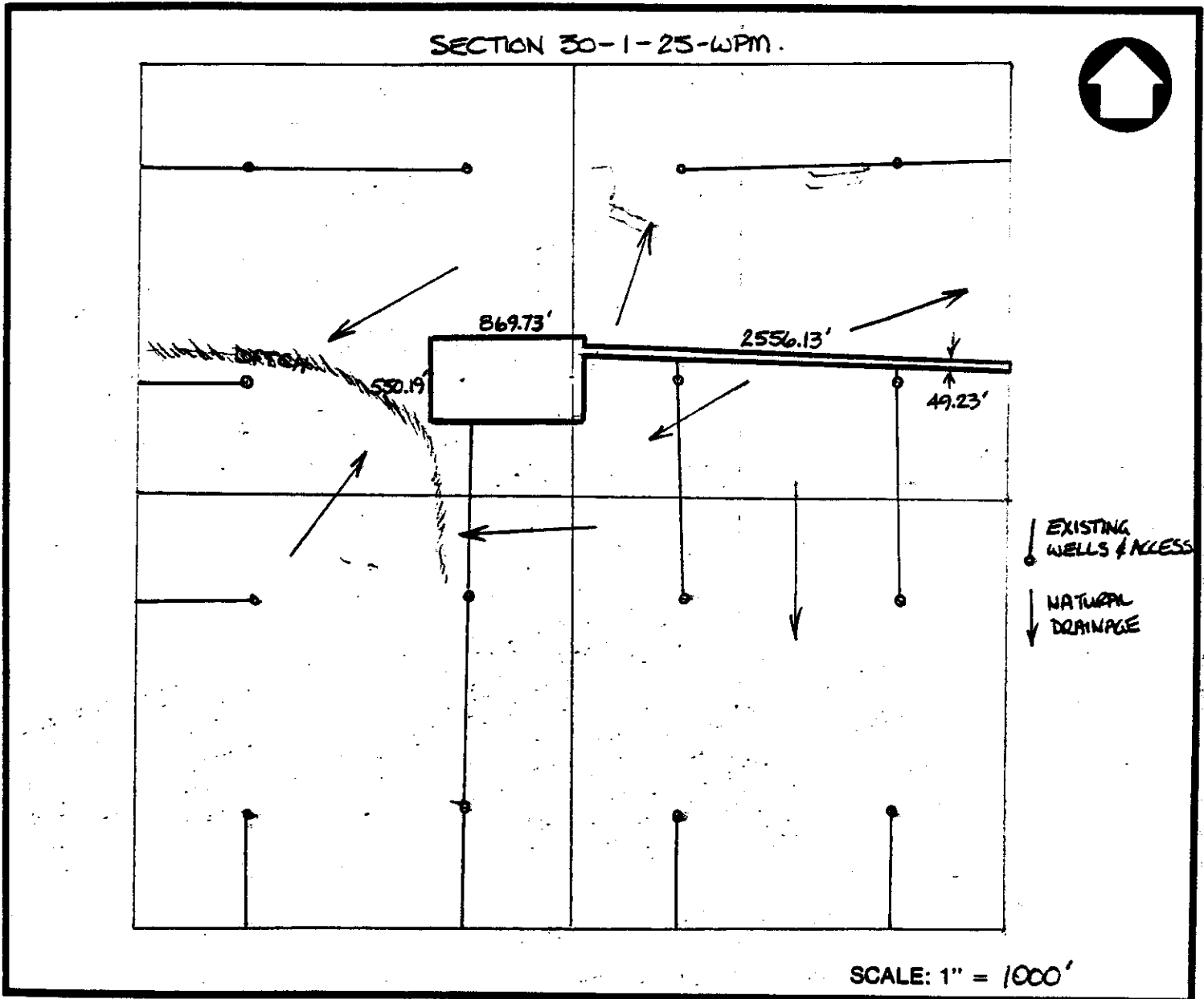
9. If proposal is for 5 lots or more please refer to Manitoba Regulation 30/77, which is a regulation under the Planning Act respecting the subdivision of land. Copies of the regulation are available at any of the Planning Branch Offices as shown on the map.

LAND TITLES OFFICE USE ONLY
Plan of Subdivision (Is) (is not) Required

Signature of the District Registrar of the _____ Office

Date _____ for District Registrar

10. If proposal is for less than 5 lots draw a sketch to scale and include the information requested below.
- A) the owner's or applicant's lands, their dimensions, including adjacent holdings;
 - B) all parcels that will result from the proposed subdivision, and their dimensions (outline in red which parcel is to be transferred, as per No. 3 of this form);
 - C) previous subdivisions made by the owner of land adjacent to the subdivision;
 - D) features such as buildings, railways, highways, creeks, rivers, drainage ditches, swamps, wooded areas, wells, septic fields, sewage treatment works, garbage dumps, on the land being subdivided or nearby;
 - E) uses of adjoining land;
 - F) driveway connections (existing or proposed) to streets and highways.



11. FEES

A fee of \$20.00 shall accompany this application. Cheques payable to the Minister of Finance.

12. I CERTIFY that the information provided on this form and attached hereto is full and complete and is to the best of my knowledge a true statement of the facts concerning this proposed subdivision.

Applicant's Signature

David A. G. /u
LANDMAN BY/OMEGA HYDROCARBONS LTD.

Date

3 August/83

MUNICIPAL AFFAIRS PLANNING BRANCH OFFICES

THOMPSON OFFICE

INCORPORATED CENTRES, TOWNS, CITIES

B.L.G.D.'s 59 ELIZABETH DR., BOX 36

R8N 1X4, 1-778-4411 Ext. 326

NORTHERN PLANNING SECTION

UNINCORPORATED COMMUNITIES: NORTHERN AFFAIRS

1418-405 BROADWAY 944-2532

R3C 3L6

SELKIRK & DIST.

PLANNING AREA BOARD

200 EATON AVE. SELKIRK

RIA0W6 1-482-6716

DAUPHIN OFFICE

27-2ND. AVENUE S.W., R7N 3E3

1-638-9111 Ext. 319

STONEWALL OFFICE

370 MAIN ST.

R0C 2Z6

1-467-5577

PORTAGE

LA PRAIRIE

OFFICE 1-857-9711

25 TUPPER ST. Ext. 278

R1N 3K1

BEAUCOURT OFFICE

PARK & FIRST ST.

ROE QCO, BOX 50

1-268-1411

Ext. 128

MORDEN OFFICE

323 N. RAILWAY ST.

R0G J0, 1-822-6221

STEINBACH OFFICE

362 MAIN ST., R0A 2A0

1-326-1381

GENERAL INFORMATION: PROVINCIAL PLANNING BRANCH, 1328-405 BROADWAY
WINNIPEG R3C 3L6 944-2532

MANITOBA

THE REAL PROPERTY ACT

THIS IS TO CERTIFY THAT at the date hereof:

1. The attached is a True Photostatic Copy of Certificate of Title Number
15798 and of all endorsements thereon.

2. The following are the only registrations which appear in the General Register against the name (s) of the registered owner (s):

Nil

3. No Tax Sale Proceedings in respect of the land described therein are on record in this Office except: those on attached Certificate of Title.

DATED at the Land Titles Office at Boissevain, on the 11th day
of July / 93

R. McDonald

ASSISTANT District Registrar.

MANITOBA

Certificate of Title

UNDER THE REAL PROPERTY ACT

HOWARD GORDON TREWIN, of the Village of Waskada in the Province of Manitoba, Farmer,

surface only.

is now seized of an estate in fee simple in possession subject to such encumbrances, liens and interests as are notified by memorandum underwritten (or endorsed hereon) in all that piece or parcel of land known and described as follows,

The North-East Quarter of Section Thirty (30) in Township One (1) and Range Twenty-five (25) West of the Principal Meridian in the Province of Manitoba.

No. 23819
Filed 5 Aug 1958
by *DISPOSOR*
allotted *to the land*
District Registrar

No. 40320
Filed 22 Sept 1958
by *DISPOSOR*
allotted *to the land*
District Registrar

No. 60195
Filed 30 May 1960
by *DISPOSOR*
allotted *to the land*
District Registrar

No. 65264
Filed 20 May 1960
by *DISPOSOR*
allotted *to the land*
District Registrar

No. 62712
Filed 15 Sept 1958
by *DISPOSOR*
allotted *to the land*
District Registrar

NO. 39933 Will
of *James 23819*
FROM *Imperial Oil Ltd*
TO
PRODUCED AND REGISTERED
31 July 1958
AT 9:33 AM
J. Richardson
DEPUTY DISTRICT REGISTRAR

NO. 5367 Will
of *James 40320*
FROM *Tenaco*
TO *Exploration Co.*
PRODUCED AND REGISTERED
28 Sept 1964
AT 9:07 AM
Mark Pette
DISTRICT REGISTRAR

NO. 77752 Will
of *James 65264*
FROM *The Canada Trust Company*
TO
PRODUCED AND REGISTERED
19 June 1965
AT 10:04 AM
M. H. R. Pette
DISTRICT REGISTRAR

No. 99315 TRANSFER of *all land in*
Registered 87100 1962 as 2813877
Cancelled in full
Vide Cert. No. 27122
Harold McKay
District Registrar

IN WITNESS WHEREOF I have hereunto signed my name and

affixed my Seal of office this Third day of April

One thousand nine hundred and forty-four

Signed in the presence of

"A. Orriss"

"Harold McKay"
District Registrar

"Seal"

for Boissevain

From No. 11887

Transfer 19417

Application 1397

Mortgage for	REGISTERED		TO	No.
	The	day of		
\$	19			
at				
			Deputy District Registrar	
Mortgage for	The	day of		
\$	19			
at				
			Deputy District Registrar	
Mortgage for	The	day of		
\$	19			
at				
			Deputy District Registrar	
Mortgage for	The	day of		
\$	19			
at				
			Deputy District Registrar	
Mortgage for	The	day of		
\$	19			
at				
			Deputy District Registrar	

No. 72304
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 77472
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 77472
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 95725
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 97966
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 77619
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

No. 80789
Filed 1/10/1941
by Omega Hydrocarbon Co.
Assistant District Registrar

No. 80818
Filed 1/10/1941
by Omega Hydrocarbon Co.
Assistant District Registrar

No. 97967
Filed 1/10/1941
by Omega Hydrocarbon Co.
District Registrar

1. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

2. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

3. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

4. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

5. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

6. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

7. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

8. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

9. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

10. Any certificate of title issued by a court in the province and registered since the date of the certificate of title, and which has been maintained in force under the provisions of any Act of the province relating thereto.

MANIT^{BA}

THE REAL PROPERTY ACT

THIS IS TO CERTIFY THAT at the date hereof:

1. The attached is a True Photostatic Copy of Certificate of Title Number
16951 and of all endorsements thereon.

2. The following are the only registrations which appear in the General Register against the name (s) of the registered owner (s):

Nil

3. No Tax Sale Proceedings in respect of the land described therein are on record in this Office except: those on attached Certificate of Title.

DATED at the Land Titles Office at Boissevain, on the 11th day
of July / 57

W. McDonald
ASSISTANT District Registrar.

MANITOBA



Cart. No. 16951

Certification of Title

UNDER THE REAL PROPERTY ACT

Howard Gordon Luwin of the Post Office of Neudade, in the Province of Manitoba, Farmer is now seized of an estate in fee simple in possession subject to such encumbrances liens and interests as are notified by memorandum, underwritten (or endorsed hereon) in all that piece or parcel of land known and described as follows The north West Quarter of Section Thirty (30) in Township One (1) and Range Twenty-five (25) West of the Principal Meridian in the Province of Manitoba.

No. 30846 TRANSFER
To: [Redacted]
Produced and Registered 13 Sept 1957
Cancelled as above
Title Cert. No. 24085

surface only

No. 39031 27th
FROM Brandon
TO Brandon
Produced and Registered
22 June 1957
AT 9:09 A.M.

IN WITNESS WHEREOF I have hereunto signed my name and
affixed my Seal of office this Seventh day of June
One thousand nine hundred and forty-five

Signed in the presence of

No. 39031 27th
FROM Brandon
TO Brandon
Produced and Registered
3 June 1957
AT 7:07 am

[Signature]

District Registrar
for Brandon

(c) Any certificate of its contents issued that of a receipt to the licensee and to grant such receipt to the licensee.

- (1) The title of a former university in actual occupation of and rightly entitled to the land at the time it was occupied under the Act; and who continues in such occupation;
- (2) Carveas affecting the land registered since the date of the certificate; and
- (3) Any town planning scheme or by-law authorised under "The Town Planning Act," or under the provisions of the charter of any city or borough, or under the provisions of the Municipal Corporations Act, or the charter of any city relating to its powers as a municipal corporation under "The Municipal Act" or the charter of any city relating to its powers as a municipal corporation.

NO.	427
FROM	O. H.
TO	
REMARKS	364
AT	19

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of
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the

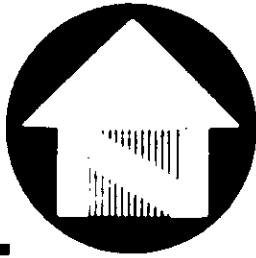
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REGISTERED AND REGISTERED

LEGEND

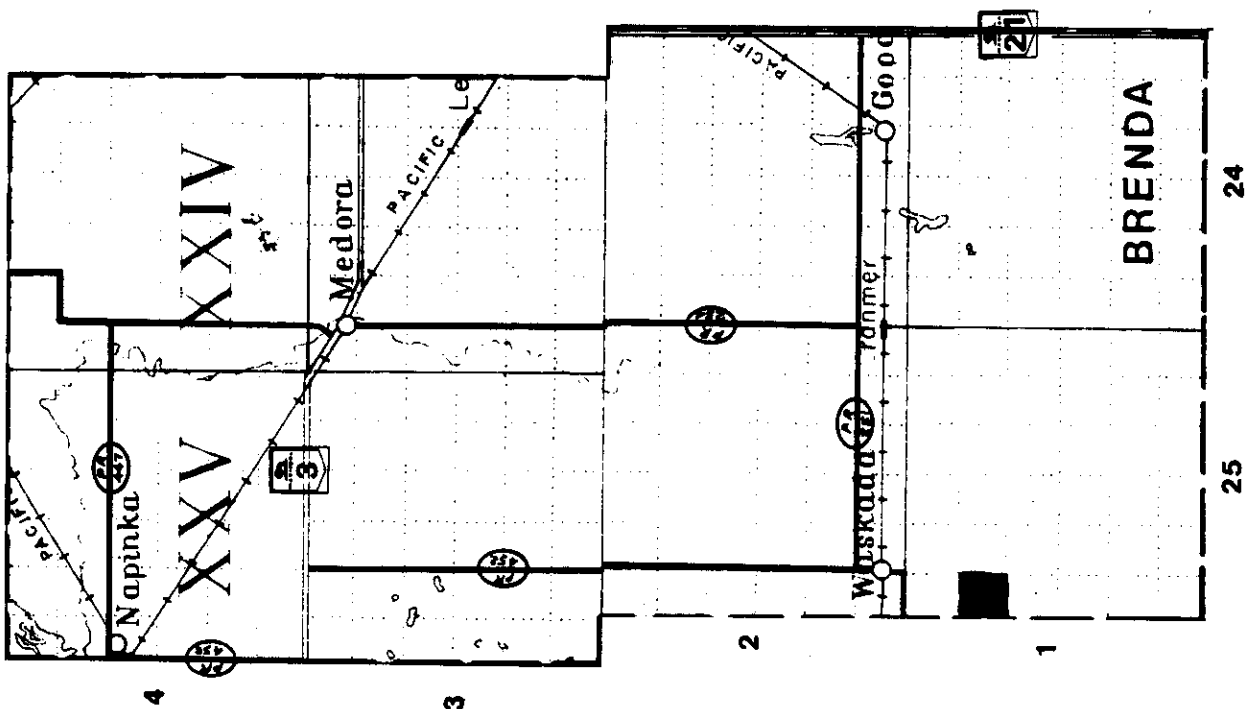
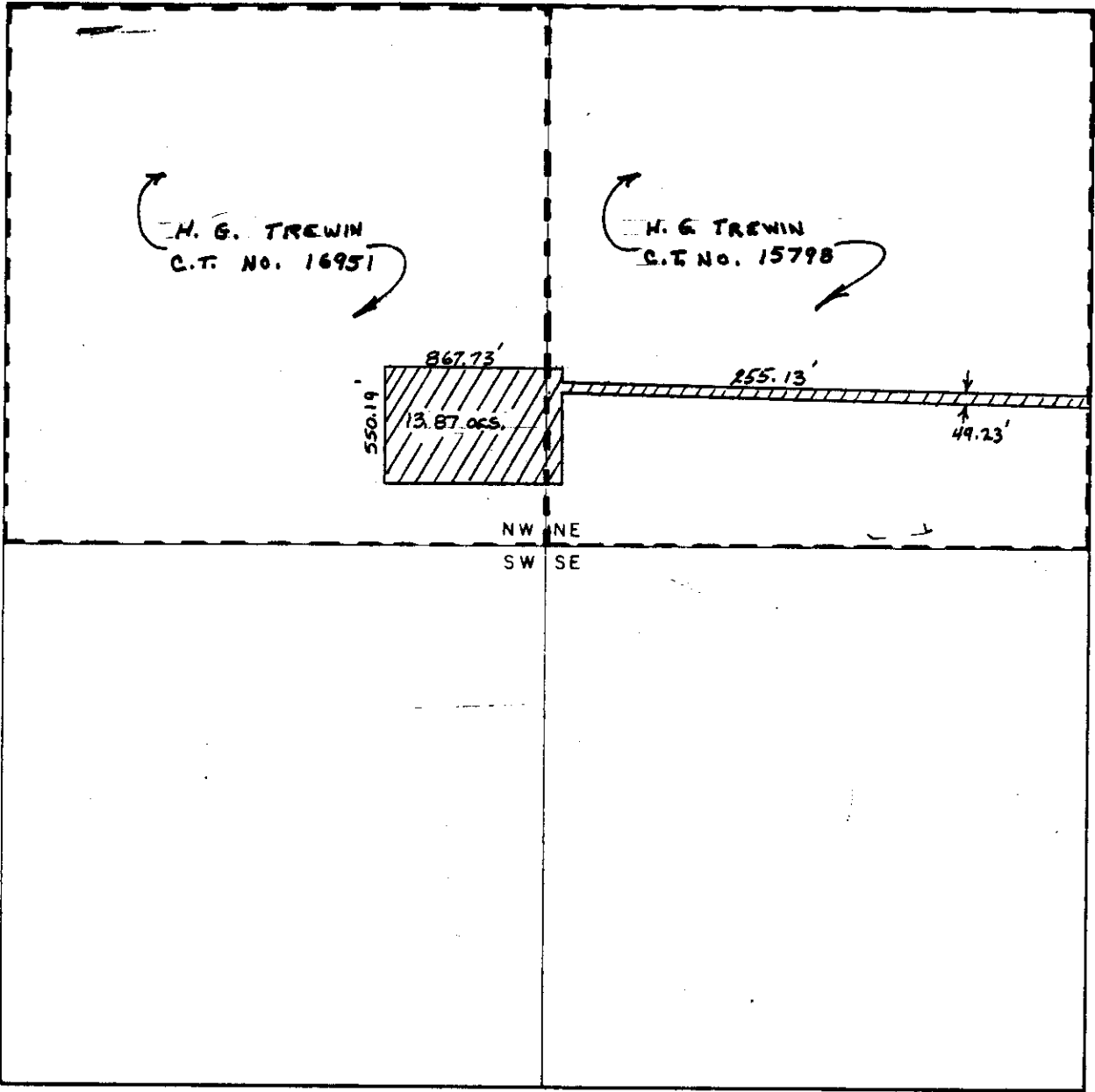
--- Exist. Property

/// Proposed Sub.



1:10000

Sec **30** Twp. **1** Rge. **25** w.p.m.





HYDROCARBONS Ltd.

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

August 29, 1983

The Oil and Natural Gas Conservation Board
309 Legislative Building
Winnipeg, Manitoba
R3C 0V8

Attention: Dr. Ian Haugh
Deputy Chairman

Dear Sir:

RE: Waskada Field - Gas Plant

As requested in your August 23 letter enclosed is our latest oil and gas production forecast for the Waskada area.

The enclosed production forecast has been generated by an extrapolation of the CMG Model Study to a field wide prediction. Certain approximations were used to complete this extrapolation which are more fully described in our August 8 letter to Mr. Marc Eliesen regarding the expansion of pressure maintenance of the Waskada Lower Amaranth Pool.

Yours truly,

OMEGA HYDROCARBONS LTD.

Ed Wyse
Petroleum Engineer

EW/sp

cc: George Patey
Jack Hall

x.c. - H. Clare Moster
September 2, 1983 - IH/ra

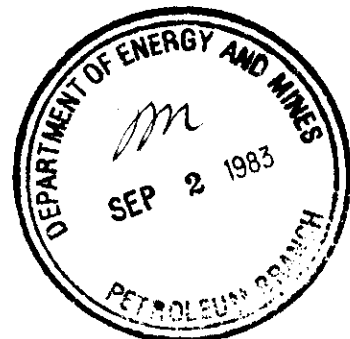


TABLE 1
PRODUCTION/INJECTION FORECAST
WASKADA PRESSURE MAINTENANCE PROJECT

TIME PERIOD (YRS)	PRD'D UNIT OIL (BOPD)	PRD'D UNIT WATER (BWPD)	OTHER PRD'D WATER (BWPD)	INJ'D UNIT WATER (BWPD)	MAKE UP WATER REQ'D (BWPD)	PRD'D UNIT RAW GAS (MMCFD)	OTHER PRD'D RAW GAS (MMCFD)	TOTAL LEAN GAS (MMCFD)	INJ'D UNIT RAW GAS (MMCFD)	FLARED LEAN GAS (MMCFD)
0-0.5	2769	2315	837	6088	2936	1.26	0.50	1.29	0.71	0.58
0.5-1.0	2905	2505	797	4684	1381	1.35	0.60	1.42	0.94	0.48
1.0-1.5	3031	2727	780	4243	736	1.59	0.71	1.68	1.31	0.37
1.5-2.0	2927	2852	689	4261	720	2.05	0.82	2.09	1.86	0.23
2.0-2.5	2934	2978	643	4368	747	2.65	0.85	2.56	2.75	< 0.19 > Convert
2.5-3.0	2935	3154	522	4767	1091	3.45	0.79	3.09	3.52	< 0.43 > Convert
3.0-3.5	2895	3457	481	5162	1224	4.09	0.76	3.54	2.83	0.71
3.5-4.0	2787	3618	419	5291	1254	4.52	0.69	3.80	3.25	0.55
4.0-4.5	2714	3747	356	5443	1340	4.91	0.61	4.02	3.75	0.27
4.5-5.0	2569	3870	290	5571	1411	5.09	0.51	4.09	4.00	0.09
5.0-5.5	2421	4109	268	5697	1319	5.59	0.48	4.43	4.38	0.05
5.5-6.0	2285	4169	230	5718	1319	5.59	0.42	4.39	4.48	< 0.09 >
6.0-6.5	2114	4268	214	5790	1309	4.97	0.40	3.92	3.54	0.38
6.5-7.0	1961	4379	199	5867	1289	4.42	0.38	3.50	2.80	0.70

June 24/83



MANITOBA
DEPARTMENT OF ENERGY AND MINES

THE OIL AND NATURAL GAS CONSERVATION BOARD
309 LEGISLATIVE BUILDING
WINNIPEG, MANITOBA
R3C 0V8

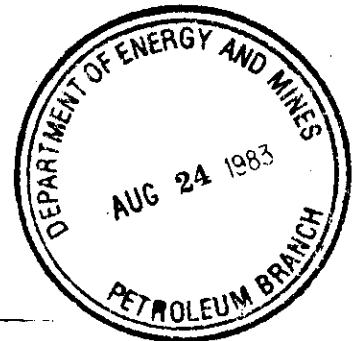
August 23, 1983

Omega Hydrocarbons Ltd.
630 - 330 - 5th Avenue S.W.
Calgary, Alberta
T2P 0L4

Attention: Mr. G. E. Patey

Dear Sirs:

Re: Waskada Field - Gas Plant



The Board acknowledges with thanks receipt of your letter of August 9, 1983, together with attachments.

The following comments are provided with respect to each of the five items:

2.2 Communication with Local Residents

Further to your letter to Mr. & Mrs. Trewin, dated June 28, 1983, the Board wishes to be kept informed of any concerns the Trewins or other local residents may present to Omega.

3.5 Production Forecast

The only production forecast included with Omega's application for expansion of pressure maintenance at Waskada appears to be in Figure 4 and Table 2 of the "Waskada Model Study". These forecasts appear to relate to the one-section model study area only. Therefore, unless you can direct us to other available information, the Board requests Omega submit its latest oil production forecast for the Waskada area, including basis for forecast.

6.3 and 6.5 Measurement & Corrosion

The information supplied is satisfactory.

Omega Hydrocarbons Ltd.

6.4 Distribution of Royalty Income

Updated information on raw gas pricing negotiations is requested as negotiations are completed.

Yours sincerely

THE OIL AND NATURAL GAS
CONSERVATION BOARD



Ian Haugh
Deputy Chairman

cc: Petroleum Branch

Mr. Larry Strachan
Chief, Environmental Control Programs

ECM/IH/ra

cc: Marc Eliesen
J. F. Redgwell

DATE: August 16, 1983

TO: H. Clare Moster

RE: Waskada Gas Plant

COMMENTS:

FROM: Ian Haugh

Does this satisfactorily answer the questions raised in our June 9th letter?

Dept.:

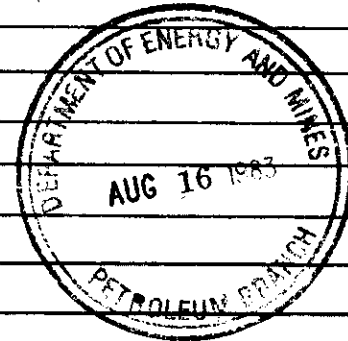
Branch:

Address:

Please draft reply for my signature.

Telephone:

- | | |
|---|---|
| <input type="radio"/> Take action | <input type="radio"/> Circulate |
| <input type="radio"/> Per your request | <input type="radio"/> See me re attached |
| <input type="radio"/> Call me on this matter | <input type="radio"/> For your information |
| <input type="radio"/> Investigate and report | <input type="radio"/> Supply data for my reply |
| <input type="radio"/> For your revision or approval | <input type="radio"/> Reply direct with copy to me |
| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |





HYDROCARBONS

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

August 9, 1983

The Oil and Natural Gas Conservation Board
989 Century Street
Winnipeg, Manitoba
R3H 0W4

Attn: Dr. Ian Haugh
Deputy Chairman

THE OIL AND NATURAL GAS
CONSERVATION BOARD
WINNIPEG, MANITOBA

AUG 12 1983

RECEIVED

Dear Sir:

Re: Waskada Field - Gas Plant

Firstly, let me apologize for the delay in this response to your June 9th letter. At the height of our summer drilling program and in the midst of all the other developments at Waskada it has been difficult to get to it.

Upon closer examination we determined that there is only one local resident within 1.6 km (1 mile) of the proposed gas plant; not two as previously stated. On June 24, I visited with Mr. Jim Trewin's household to outline our plans regarding the gas plant and enclosed is a copy of my confirming letter to Mr. and Mrs. Trewin.

*still no
modification
of Trewin's
response.*

Regarding the production forecast tabled with our original application I would comment that we are continually revising and hopefully improving on our production forecasts for the Waskada field. Insofar as we felt the forecast, particularly the oil forecast, was not critical to our gas plant application, the one presented was fairly crude. We would add that this forecast has subsequently been refined and improved based upon our more recent reservoir work and a much better forecast has been tabled with application for expansion of pressure maintenance at Waskada. You should have that forecast in your possession but if necessary we can submit more copies.

*study provides
forecast for
model study area
only (see 840 and)*

In response to your questions on measurement and corrosion we requested Swinarton Engineering, our consultant for this job, to respond. Their letter is attached.


x.c. - H. Clare Moster
August 16, 1983 - IH/ra

2/.....

At this time there are no further details to report regarding raw gas price negotiations. It was our intention to enter into serious negotiations regarding price during the unitization process which is only just now beginning. We have not as yet received any indication from offsetting producers, currently not in the unit area, that they are interested in having their gas up for sale. Our initial negotiating position is that a relatively modest price be placed upon the raw gas with due consideration of the discounted value of very uncertain future gas sales and the very high capital and operating cost of the plant. We are anticipating negotiating a price of 10 to 20 cents per thousand cubic feet.

Yours truly,

OMEGA HYDROCARBONS LTD.


George E. Patey
V.P. Production

GEP/WEW/ms

cc: J. Hall
E. Wyse



HYDROCARBONS Ltd.

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

July 28, 1983

Mr. & Mrs. Jim Trewin
P. O. Box 122
Waskada, Manitoba
ROM 2E0

Dear Mr. & Mrs. Trewin:

This letter will confirm our conversation of June 24, 1983 wherein I discussed Omega Hydrocarbons Ltd. plans to construct a gas plant at our battery site located in Lsd. 11 Sec. 30 Twp. 1 Rge. 25 WPM. The plant will be situated within one mile of your home but should certainly improve any previous problems you may have encountered due to the odor from the sour gas being flared at our battery. Some of the items we discussed when I visited you and your wife are listed below.

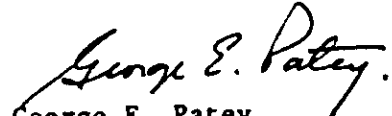
Please feel free to call me collect at 403-261-0743 if you have any further questions or I would be glad to stop by your home my next visit to Waskada which is planned the middle of August.

1. The gas plant is currently being designed and should be in operation by Dec. 1, 1983, until that time the gas flare should not change dramatically.
2. The plant will remove the hydrogen sulfide from the gas and the sour gas will be flared through a 75 foot flare stack. The sour gas odor that presently exists will be minimized substantially and this will be the only gas flared therefore the flare that exists today will be reduced to a very small amount. (Less than 5 percent of the current rate.)
3. The sweet gas recovered from the plant will be pumped into some of the wells and used as a means of pressure maintenance.
4. The gas plant itself will remove propane, butane and pentanes, plus the propane and butane will be stored in approved pressure vessels for future sale. These vessels will be equipped with all the required safety features and will definitely not create any safety problems. The pentanes plus are the heavier liquids recovered from the gas and these will be mixed into the oil in the storage and sold with the crude oil.

The plant will be protected by all the latest safety shut down devices and alarm systems. The plant yard including the propane and butane storage will be fenced with a six foot Frost type fence.

Yours truly,

OMEGA HYDROCARBONS LTD.

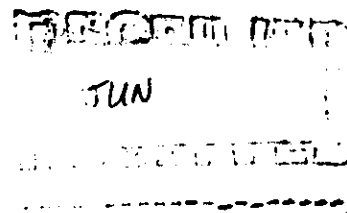

George E. Patey,
Vice President, Production

GEP/cn

SWINARTON ENGINEERING LTD.

206, 2050 - 10th Avenue S.W., Calgary, Alberta T3C 0J9 245-3302

June 21, 1983



Omega Hydrocarbons Ltd.
630, 330 - 5 Avenue S.W.
Calgary Place One
Calgary, Alberta
T2P 0L3

ATTENTION:

Mr. Ed Wyse

Dear Sir:

Re: Waskada Gas Plant
E.R.C.B. Application Information

In reference to the deficiency letter from the Manitoba E.R.C.B., we offer the following information for your use in response to the letter.

Metering

1. Treater Gas FR-1 - existing and supplied by Omega.
2. Stock Tank Vapors FR-12 - 2" 150#ASA Orifice type meter with Barton 202A 2 pen recorder.
3. Acid Gas FR-2 - 2" 150#ASA Orifice Flanges (no flow recorder).
4. Heater Fuel Gas FR-3 - 1" Roots P.D. type meter with totalizer register.
5. Propane Product M-4 - 1" Flotrac Model 380 P.D. type meter.
6. Butane Product M-5 - 1" Flotrac Model 380 P.D. type meter.
7. Condensate Product M-6 - 1" Flotrac Model 380 P.D. type meter.
8. Reinjection Gas FR-7 - 2" 300#ASA Simplex meter with Barton 202A 3 pen recorder.
9. Propane Loading M-8 - 3" 300#ASA P.D. type meter with meter prover valving.
10. Butane Loading M-9 - 3" 300#ASA P.S. type meter with meter prover valving.

Page 2

June 21, 1983

Omega Hydrocarbons Ltd.

Mr. Ed Wyse

11. Gas to Flare FR-10 - 4" 150#ASA Orifice type meter with Barton 202A 2 pen recorder.
12. Engine Fuel Gas FR-11 - 2" 150#ASA Orifice type meter with Barton 202A 2 pen recorder.

The dry flow gas meters will be zero checked weekly when charts are changed and calibrated at least every 6 months. The liquid product meters can be calibrated in the shop with a replacement unit installed during the repair period. The loading meters will be set up for proving in place.

Corrosion

As stated in Section 6.5 of the plant application, concerns regarding corrosion are limited to the gas sweetening and amine regeneration units. In recognition of potential metal loss due to the hydrogen sulfide in these systems, an extra 1/8" has been added to the required wall thickness of vessels and piping. This corrosion allowance provides for metal loss without affecting the maximum operating pressure of the equipment. A uniform corrosion process which created metal losses in the order of 5-6 mils per year would result in the useful life of the sour gas processing equipment to be 20 years.

However, it is recognized that the nature of corrosion is such that the whole system will not corrode at an exact and consistent rate. The monitoring program will be employed to determine the type of corrosion process occurring and its location in the system. In corrosion monitoring, it is important to establish trends rather than relying on individual readings. Thus, if metal losses are measured in excess of 5 mils per year, this would not be seen as a crisis until the type of corrosion mechanism was established and the previous readings indicated a trend towards high corrosion rates.

If you have any questions, please do not hesitate to call.

Yours very truly,



D. Padula, P. Eng.

DP:ew

DATE: June 17, 1983

Bob
→ *Gas Plant file***NEWS
SERVICE****\$2.5M GAS PLANT
SET FOR WASKADA**

Energy and Mines Minister Wilson D. Parasiuk has announced that Omega Hydrocarbons Ltd. has been authorized to begin construction of a gas plant in the Waskada Oil Field.

Mr. Parasiuk stated that this will be the first such plant in Manitoba's history and that plans are underway to have the plant in operation before year end. The gas is produced in association with the oil production in the area which the minister indicated had averaged 3,600 barrels per day during March, and is expected to increase throughout the year as development drilling continues.

Approximately 300 cubic feet of gas is presently being produced with each barrel of oil. Some of the gas is used to operate current facilities, but more than one million cubic feet per day is presently being flared.

The company feels that increasing gas volumes justify construction of the plant and will be investing in the order of \$2.5 million to construct the facility. Once in operation, the plant itself will be able to process up to three million cubic feet per day. Initially Omega plans to remove the liquid hydrocarbons (propane, butane and condensate) from the rich raw gas and market them. The feasibility of injecting the remaining dry gas back into the producing formations for enhanced recovery purposes, storage and possible future production and sale is also being studied.

Mr. Parasiuk stated that once the plant is operating, waste will be reduced, all interested parties including the government will benefit from increased revenues, and emissions to the atmosphere will be reduced. The plant will be subject to environmental controls established by the Clean Environment Commission.

One Copy

1 Brandon Sun - June 10 1982

Waskada to get gas-recovery plant

SUN/CP

Omega Hydrocarbons Ltd. has won approval for its plan to build a \$2.5-million natural gas recovery plant in the Waskada oil field of southwestern Manitoba.

Energy Minister Wilson Parasiuk said Wednesday that the plant, which will extract liquid hydrocarbons such as butane and propane from the gas, will make use of the more than one million cubic feet of natural gas that is now being burned away in the oil fields. The

gas is a byproduct of oil production. In 1982, it was estimated by Omega officials that 2.5 million cubic feet of natural gas was produced from Waskada wells daily.

Based on consumer prices at that time, about \$10,000 worth of gas was lost each day.

Mr. Parasiuk said the plant will be capable of handling up to three million cubic feet of gas a day and should be operating by the end of the year.

Company spokesman Bob Wilcox

said the plant pieces will be constructed in Alberta and transported to the area by truck for assembly this autumn. It will take about 12 workers and 10 days to assemble the plant at its site, approximately three kilometres south of the community of Waskada.

Although Omega initially will burn off the dry gas left after the liquids are extracted, Mr. Parasiuk said other uses for the dry natural gas, including reinjection back into the ground for future use, are being studied.

The plant is the first of its kind in Manitoba.

Alberta study fails to clarify argument on gas-plant perils

By BARRY NELSON
Special to The Globe and Mail

CALGARY — Pollution from Alberta's natural gas processing plants may pose a serious health problem to people living nearby, but the latest study — one of many launched during 25 years of complaints — has done little to clear the air on what hazards actually exist.

After two years of research into the health problems of people living near two gas plants at Twin Butte in the southwestern corner of Alberta, University of Alberta sociologist Earle Snider produced a report that found living downwind from the two plants is "statistically associated with higher levels of family cancer," but does not cause cancer.

The Snider report found that Twin Butte residents reported significantly higher incidences of nine symptoms than residents of two control locations that were studied. These were: clumsiness, lethargy, sore or hoarse throats, dry coughs, troubled breathing, sore or burning noses, hurting all over for no apparent reason, feeling weak all over

and loss of sense of smell.

The study also found hair samples taken from Twin Butte residents contained higher levels of chromium, iron, mercury and cadmium and lower levels of calcium and magnesium. It concluded that "the health issues identified are not, generally, only in people's minds," and that "downwind status from the two gas plants was determined to be the most statistically significant predictor of health symptom factor scale scores."

The finding of a relationship between living downwind from the plants and higher cancer levels was not based on actual cancer rates, but was drawn from remembered occurrences of cancer within families during the past two generations.

There are about 600 gas processing plants in the province, 132 of which handle sour (sulphur-bearing) gas like the ones near Twin Butte. Most of the sour gas plants are small, flaring operations which burn hydrogen sulphide to produce sulphur dioxide, which is simply released into the atmosphere.

Although these plants create an environmental problem with the 440,000 tonnes a year of sulphur dioxide they release into the atmosphere (the fourth largest source of sulphur dioxide pollution in Canada), immediate health concerns centre on the 42 sulphur recovery plants that extract sulphur from natural gas for sale to the chemical and fertilizer industries.

The Alberta Government collects about \$80-million annually in royalties from these plants, which sell about 60 per cent of the \$1-billion worth of sulphur produced yearly in Canada. The market for sulphur is growing at a time when revenue from oil and gas sales is falling, making the province reluctant to impose tougher emission control standards on the sulphur recovery plants in the absence of absolute proof that they are a serious health threat.

Opposition politicians are attacking the Government for not launching an immediate study of all sour gas plants in the province.

Opposition Leader Grant Notley called the Government immoral for refusing to begin a broad study of the subject and Liberal Leader Nick Taylor has called for a special commission to study gas plants. Mr. Taylor said the province made a "conscious decision to feed Albertans so much sulphur or heavy metals. They have decided they want \$50,000 or \$100,000 more in royalties rather than pay for more efficient plants."

While there is comfort in the fact that the Snider study did not establish a causal link between the plants and cancer, another scientist has made findings that create new worries.

Alex Gnypp, one of two University of Windsor scientists hired by the Alberta Energy Resources Conservation Board to study trace elements in gas plant emissions, has found "well-established" levels of arsenic and cadmium, which is known to cause cancer, coming from plants not previously connected with health problems.

He said these toxic metals probably do not reach dangerous levels in the air at Calgary and Red Deer, which are downwind from the

Quebec favors a buffer zone in jobs dispute

CHARLOTTETOWN (CP) — Quebec Premier Rene Levesque said yesterday he would be willing to set up a buffer zone in an area of the Gaspé Peninsula to allow free movement of workers across provincial boundaries.

Mr. Levesque said a 160-kilometre area in northern New Brunswick and the Gaspé "would be an open area that people can move back and forth from jobs."

Unemployed workers in the Campbellton-Dalhousie area of northern New Brunswick have held a series of protests against Quebec workers crossing into New Brunswick to work at pulp and saw mills. They feel the Quebecers are taking jobs they should have.

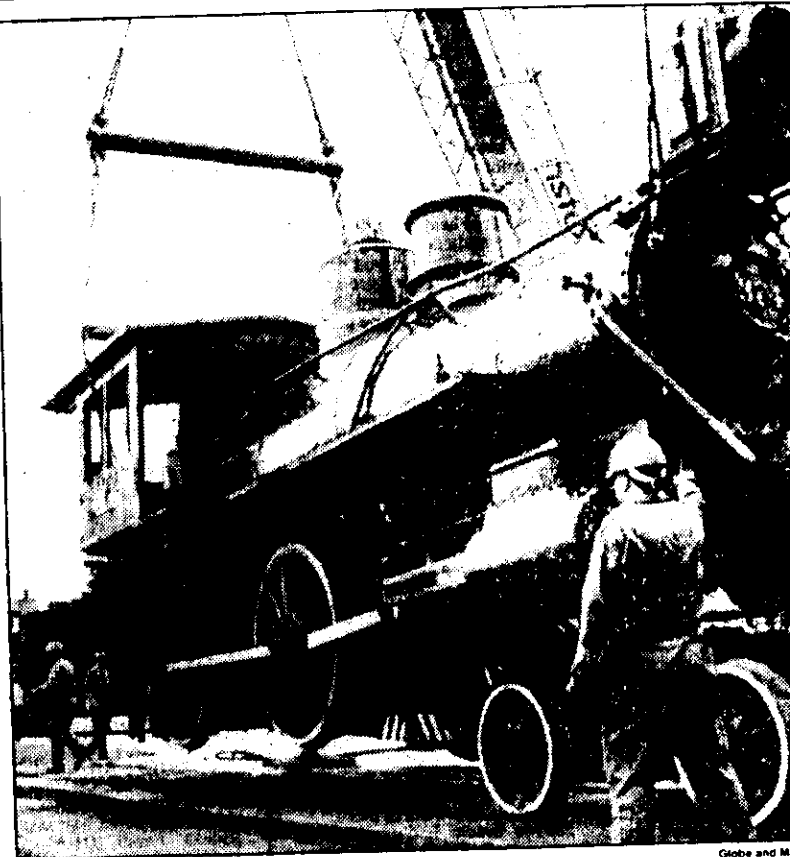
Mr. Levesque, interviewed at the annual meeting of the New England governors and Eastern Canadian premiers, met New Brunswick Premier Richard Hatfield yesterday to discuss how to defuse the problem.

The RCMP have sent reinforcements into the Campbellton-Dalhousie area in case trouble erupts with the unemployed N.B. workers.

The Oscar Belanger Co. in St. Arthur, N.B., reopened yesterday after shutting down because of threats of damage to its property if it didn't get rid of four Quebec employees. Rather than fire the four employees, the company had closed for two weeks, laying off 80 workers.

Mulroney told to rest

OTTAWA (CP) — Progressive Conservative Leader Brian Mulroney has cancelled all appointments for two days due to a mild ear infection. He returned here yesterday after a weekend at home in Montreal, but spent the day resting and plans to do the same today under orders from his doctor, spokesman Pat MacAdam said. Mr. Mulroney



Antique engine 374 is loaded aboard a flatbed truck in Vancouver yesterday.

Historic steam locomotive to be given overdue face

By IAN MULGREW
Globe and Mail Reporter

VANCOUVER — After 40 years of neglect, a piece of Canadian history was cut into fragments and hoisted onto a flatbed truck — the start of a three-year journey to refurbish the first steam locomotive to travel from Montreal to Vancouver.

As about 50 people — mainly children, pensioners and reporters — watched, the 30-ton Canadian Pacific Railway Locomotive No. 374 was raised from a Kitsilano Beach parking lot where it has languished for nearly half its life as a makeshift set of monkey

bars and graffiti blackboard.

Once the smokestack and the cow catcher had been removed, the black engine considered one of the country's most important historic steam locomotives was moved to a warehouse on Granville Island where it will be restored by a group of railway enthusiasts in time for its centenary in 1986.

Built in 1886 in CPR's Montreal workshops, the Atlantic Class locomotive was the first to make the transcontinental journey to Vancouver. Before its historic journey into the city on May 23, 1887, the trains had run only as

far as Port Moody, terminus 24 kilometres from Vancouver.

The CPR gave the train to the city in the 1940s, deteriorated since — once kept up only by way workers and love wood-burning engines.

The Canadian Railway Association and Coast Railway Association raised about \$40,000 to estimate \$100,000 to turn the train to its running condition in the world transportation museum held here in 1986.

Footprints match, experts test at Winnipeg police murder trial

Special to The Globe and Mail

WINNIPEG — Scotland Yard was brought yesterday into the trial of two former Winnipeg policemen charged with first degree murder in the death of a relative of one of the accused.

Dr. Owen Facey, a forensic scientist with Britain's famed police force, told a Court of Queen's Bench jury that a bloody footprint on the pavement at the scene of the alleged killing matches the paint footprint obtained later from then constable Barry Nielsen.

Mr. Nielsen, 30, is standing trial with his former police partner, Jerry Stolar, 35, in the death of Paul Clear, 27, who disappeared on the way to his midnight brewery job two years ago.

Mr. Clear and Mr. Nielsen had married sisters.

Efforts by Mr. Nielsen's lawyer,

land Yard witness was met by a caution from Mr. Justice John Scolin, who said "the impact of the evidence speaks for itself."

Mr. Nielsen, in a three-piece suit and with a neatly trimmed full beard and mustache, scribbled notes in the marble prisoner's box as the witness produced some of the most dramatic testimony of the trial, now in its third week.

He placed a photographic transparency of Mr. Nielsen's left foot over a photograph of the bloody footprint found on an outlying Winnipeg street on Aug. 18, 1981. It is "so unlikely" that anyone else in Winnipeg would have a similar print, he testified.

Using British data, he noted that Mr. Nielsen's exceptional foot width would fit only one person in 100. His type of toe spread fits about one in 32 and his shoe size, 9½, is

tion. Putting all of his evidence together, he said Mr. Nielsen is at most one in 100,000.

He invited the jury to draw their own conclusions from Nielsen's transparent bloody print testimony.

Last week, Dr. Facey, an anthropologist at the University of North Carolina, testified that the "remote" that the Nielsen was based on an analysis of an 11-year-old worked in Africa. Leakey, wife of the famous paleontologist, and will soon have footprints, she testified.

Earlier testimony by Mr. Clear's bodyguard, a man who



MANITOBA

Department of Energy and Mines
The Oil and Natural Gas Conservation Board

989 Century Street
Winnipeg, Manitoba
R3H 0W4

June 9, 1983

Omega Hydrocarbons Ltd.
630 - 330 - 5th Avenue S.W.
Calgary, Alberta
T2P 0L4

Attention: Mr. G. E. Patey

Dear Sir:

Re: Waskada Field - Gas Plant

The Board has reviewed your application for approval to construct and operate a gas liquids recovery plant in the Waskada Field. Although clarification of certain items listed below is required, the Board is in agreement with the general concept of your proposal and hereby authorizes Omega Hydrocarbons Ltd. to proceed with construction. ←

Prior to commencing operation of the plant, Omega will be required to demonstrate compliance with all applicable environmental standards and procedures. In addition the Board requests, at your earliest convenience, clarification of the following items (section numbers of your application are provided for your reference).

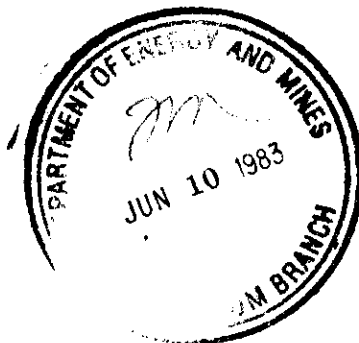
2.2 Communications with Local Residents

Who are the two residents within 1.6 miles of the plant?
What was the outcome of discussions with the affected residents?

3.5 Production Forecast

What is the basis of the production forecast? Calculations using differential liberation data from the PVT study on fluid from Omega Waskada 8-26-1-26 and Omega's gas production forecast indicate a peak oil rate of approximately 1 100 m³ per day (7,000 BPD). We note that this is roughly twice the current rate.

....2



6.3 Measurement

Please indicate the types of meters to be installed at each metering location. In addition, what are your plans regarding calibration procedures and frequency?

6.4 Distribution of Royalty Income

Further details of raw gas pricing negotiations.

6.5 Corrosion

What is the acceptable corrosion rate?

Yours sincerely,

THE OIL AND NATURAL GAS
CONSERVATION BOARD

ORIGINAL SIGNED BY
IAN HAUGH

Ian Haugh
Deputy Chairman

c.c. **Petroleum Branch**

Larry Strachan
Chief, Environmental Control
Programs.

June 8, 1983

M. A. Chochinov
Special Consultant
Energy Division
200 - 500 Portage Ave.

L. R. Dubreuil
Chief Petroleum Engineer
975 Century St.

Re: Gas Production - Waskada Field

Further to your recent request, attached (Table No. 1) is a forecast of solution gas production for the Waskada Field for the period 1983 - 2002.

The Waskada oil field is still in the relatively early stages of development, therefore any production prediction at this time is subject to substantial uncertainty. To minimize the effect of this, two cases reflecting an optimistic and a pessimistic oil rate are included. The range bracketed by these cases is considered to be the most probable situation at this time but it is entirely possible that further drilling and production history would result in production rates falling either above or below the range.

In calculating the gas production, it was assumed that available PVT data accurately affect solution gas levels and that 70% of the oil production originates from the Lower Amaranth Formation while the remaining 30% originates from the Mississippian Formations.

The figures on Table No. 1 represent gross production. Some portion of this (estimated at 10% during peak production periods and 50% at minimum production levels) would be used as fuel gas for treaters and other field facilities.

If you have any further questions with regards to this prediction, please contact the undersigned.

Original Signed By
L. R. DUBREUIL

L. R. Dubreuil

LED/sb
Att:

cc: - H. C. Mostar

Table No. 1

Waskada Field Gas Production

Year	Oil Rate (BPD)		Gas Rate (MCF/d)	
	<u>HIGH</u>	<u>LOW</u>	<u>HIGH</u>	<u>LOW</u>
1983	4000	3500	1216	1064
1984	5000	3500	1520	1064
1985	5000	3250	1520	988
1986	4700	2950	1428	897
1987	4450	2700	1353	820
1988	4250	2500	1292	760
1989	4000	2300	1216	699
1990	3800	2100	1155	638
1991	3600	1900	1094	578
1992	3400	1750	1034	532
1993	3250	1620	988	492
1994	3100	1500	942	456
1995	2900	1360	882	413
1996	2750	1250	836	380
1997	2620	1150	796	350
1998	2500	1060	760	322
1999	2380	970	724	295
2000	2250	900	684	274
2001	2130	825	647	250
2002	2020	755	614	230



Environmental Management Division
Box 7, Building 2
139 Tuxedo Avenue
Winnipeg, Manitoba
R3N 0H6

June 3, 1983

Mr. George Patey,
V.P. Production,
Omega Hydrocarbons,
630 - 330 Fifth Avenue S.W.,
CALGARY, Alberta.
T2P 0L4



Dear Mr. Patey:

Re: Waskada Area - LPG Recovery
Plant Application

A copy of your application for the above facility which was submitted to the Oil and Natural Gas Conservation Board on May 19, 1983, has been referred to this office for processing pursuant to the Clean Environment Act of the Province of Manitoba.

Accordingly, I enclose two copies of the forms required to register your application, as well as a copy of the Clean Environment Act. I would request that you complete and forward one copy of the form to my office at your earliest convenience.

Filing of the form with this office satisfies the legal requirements of the Act and once the form is received, your company can proceed to construct and operate the LPG Recovery Plant. This Branch will complete an environmental assessment on your application and prepare an Environmental Report including recommendations for limits of emissions to the environment. This Report will be forwarded to the Manitoba Clean Environment Commission for the issuance of an Order under the Act detailing legal limits, terms and conditions for emissions to the environment. Omega Hydrocarbons will be expected to comply with this Order once it is issued by the Commission. The issuance of the Order by the Commission may also involve a public hearing dependent on public reaction to your application.

.../2

Mr. G. Patey

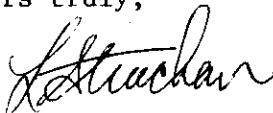
- 2 -

June 3, 1983

Staff of this Branch have conducted an initial review of your application and I can advise that we have no major environmental concerns with the material submitted. We will require, however, further information on chemical storage at the plant site and on the makeup and handling of the wastewater from the plant. Once your application has been filed formally with us, it will be advantageous for us to meet to discuss it in more detail.

Should you have any questions regarding the above, please give me a call (204) 895-5296.

Yours truly,



L. Strachan, P. Eng.,
Chief,
Environmental Control Programs.

LS/ic

Enclosures

cc: The Oil & Natural Gas Conservation Board
Attn: Dr. Ian Haugh, Deputy Chairman.

L. R. Dubreuil, Chief Petroleum Engineer.

May 26, 1983

Mr. Larry Strachan
Chief, Environmental Control Programs
Dept. of The Environment
2 - 139 Tuxedo Blvd.

L. R. Dubreuil
Chief Petroleum Engineer
Dept. of Energy & Mines
Petroleum Branch
975 Century St.

Re: Waskada Field - Gas Processing Plant

Further to the Oil and Natural Gas Conservation Board's letter of April 26, 1983 to Omega Hydrocarbons Ltd., regarding a proposed gas plant in the Waskada area, Omega has submitted additional information in support of its application. A copy of Omega's additional submission is attached for your review.

I would propose that once you have had an opportunity to review the attached material, we meet to discuss your particular concerns and your continuing involvement in the approval process. Please call me at 633-9543, (ext. 176) to set a time and place for a meeting.

Original Signed By
L. R. DUBREUIL

L. R. Dubreuil

LRD/sb
Att:

cc: - The Oil and Natural Gas Conservation Board
- H. Clare Moser

DATE: 1983 05 25

MANITBA

TO: BOB

FROM: NBM

Dept.:

Branch:

Address:

Telephone:

- | | |
|---|---|
| <input checked="" type="radio"/> Take action | <input type="radio"/> Circulate |
| <input type="radio"/> Per your request | <input type="radio"/> See me re attached |
| <input type="radio"/> Call me on this matter | <input type="radio"/> For your information |
| <input type="radio"/> Investigate and report | <input type="radio"/> Supply data for my reply |
| <input type="radio"/> For your revision or approval | <input type="radio"/> Reply direct with copy to me |
| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |

COMMENTS:

① Draft covering memo to Larry Strachan to accompany copy of submission and requesting a meeting with him when he has had a chance to review submission for environmental concerns.

Also to discuss further involvement of Env. in approval process.

② Review submission and prepare list of any further questions we might wish to discuss or request info on from Omega.

PROVINCE OF MANITOBA
ENVIRONMENTAL MANAGEMENT DIVISION

Submission for Approval of Proposal

I/We _____
(NAME OF COMPANY OR INDIVIDUAL)

do hereby file this proposal with the Environmental Management Division
pursuant to Section 14(1) of the Clean Environment Act.

I/We submit the attached information in support of my/our proposal and
agree to supply such additional information as the Division may require.

NAME OF APPLICANT - Please Print

TITLE

SIGNATURE OF APPLICANT

COMPANY NAME IF APPLICABLE

Dated at _____ this _____
_____ day of _____,
19 ____.

MAILING ADDRESS

POSTAL CODE

TELEPHONE NO.

BASIC INFORMATION TO ACCOMPANY SUBMISSION FOR APPROVAL OF PROPOSAL:

1. Legal description of site of operation (e.g., Section, Township, Range, Lot No.): PLEASE ATTACH A COPY OF THE MANITOBA CERTIFICATE OF TITLE

2. Municipality or Local Government District:

3. Proposed date of Start of Operation:

4. Identify all Discharges to the Environment:

a. Discharges to Water: _____

b. Discharges to Soil: _____

c. Discharges to Air: _____

5. Provide a brief description of the proposed industry, undertaking, plant or process, or identify proposed alterations to existing facility.
(Add additional sheets and supporting plans as necessary)

CHAPTER C130

THE CLEAN ENVIRONMENT ACT.

(Assented to July 20, 1972)

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of Manitoba, enacts as follows:

Definitions.

1 In this Act,

- (a) "abatement project" means a project for the abatement of an undesirable environmental condition affecting premises by the removal and relocation of the undertaking causing the condition or by the removal and relocation of the premises affected by the condition;

En. S.M. 1980, c. 59, s. 1.

- (a.1) "air" means the atmosphere but does not include the atmosphere within a mine or within a building other than any building designated by the minister;

En. S.M. 1974, c. 41, s. 1.

- (b) "body of water" includes any body of flowing or standing water whether naturally or artificially created;

- (c) "commission" means The Clean Environment Commission established under this Act;

- (d) "contaminant" means any solid, liquid, gas, waste, odour, heat, sound, vibration, radiation, or a combination of any of them that

- (i) is foreign to or in excess of the natural constituents of the environment; or
- (ii) affects the natural, physical, chemical, or biological quality of the environment; or
- (iii) is or is likely to be injurious to the health or safety of a person; or
- (iv) is or is likely to be injurious or damaging to property; or
- (v) is or is likely to be injurious or damaging to plant or animal life; or
- (vi) interferes or is likely to interfere with visibility; or
- (vii) interferes or is likely to interfere with the normal conduct of business; or
- (viii) interferes or is likely to interfere with the comfort, well-being or enjoyment of a person;

and "contaminate" has a similar meaning;

- (d.1) "department" means the Department of Mines, Resources and Environmental Management or such other departments as may be designated by the Lieutenant Governor in Council;

En. S.M. 1974, c. 41, s. 1.

(c) "environment" means the air, water or soil;

(c.1) "environmental accident" means the release of a contaminant into the environment, otherwise than in accordance with the regulations or an order of the commission, which, having regard to the environment in which the release takes place and to the nature of the contaminant released creates or may create a hazard to human life or health, to other living organisms, or to the physical environment;

En. S.M. 1980, c. 59, s. 2.

(c.2) "hazardous material" means any substance designated as a hazardous material in the regulations;

En. S.M. 1980, c. 59, s. 2.

(f) "limits" means limits prescribed by order of the commission or prescribed by regulations made under this Act;

(g) "minister" means the member of the Executive Council charged by the Lieutenant Governor in Council with the administration of this Act;

(g.1) "municipality" includes a local government district;

En. S.M. 1974, c. 41, s. 1.

(h) "regulation" means a regulation made under this Act;

(i) "soil" includes land, earth and terrain;

(j) "waste" includes rubbish, litter, junk, junked, obsolete or derelict motor vehicles, or obsolete or derelict equipment, appliances or machinery, slimes, tailings, fumes, smoke, waste of domestic or municipal or mining or factory or industrial origin, effluent or sewage, human or animal wastes, solid or liquid manure, or waste products of any kind whatsoever or the run-off from such wastes;

(k) "water" includes flowing or standing water on or below the surface of the earth and ice formed thereon.

S.M. 1972, c. 76, s. 1; Am. S.M. 1974, c. 41, s. 1; S.M. 1980, c. 59, ss. 1 & 2.

General supervision by minister.

2(1) Notwithstanding anything contained in this Act or in any other Act of the Legislature the minister has general supervision and control over all matters relating to the preservation and improvement of the environment and the prevention and control of contamination of the environment.

Establishment and duties of commission.

2(2) There shall be a commission to be called The Clean Environment Commission that shall carry out such duties and functions as are conferred or charged on it under this Act or any other Act of the Legislature.

Appointment of advisory committee.

2(3) The minister may establish and appoint the members of such advisory committees as he considers desirable for the purpose of advising and assisting him in carrying out the purposes and provisions of this Act.

Expenses of members of advisory committees.

2(4) Each member of an advisory committee may be paid such travelling and out-of-pocket expenses necessarily incurred by him in discharging his duties as a member of the committee as may be approved by the minister.

S.M. 1972, c. 76, s. 2.

No contamination of air in excess of prescribed limits.

3 No person, either directly or indirectly, shall cause, suffer, or permit the contamination of air in excess of prescribed limits.

S.M. 1972, c. 76, s. 3.

No contamination of soil in excess of prescribed limits.

4 No person, either directly or indirectly, shall cause, suffer, or permit the contamination of soil in excess of prescribed limits.

S.M. 1972, c. 76, s. 4.

No contamination of water in excess of prescribed limits.

5 No person, either directly or indirectly, shall cause, suffer, or permit the contamination of water in excess of prescribed limits.

S.M. 1972, c. 76, s. 5.

Report of environmental accident.

5.1 Every person responsible for and every person having the custody and control of any contaminant involved in an environmental accident shall forthwith after the occurrence of the environmental accident report the environmental accident and the details in respect thereof in accordance with the regulations.

En. S.M. 1980, c. 59, s. 3.

Ministerial orders re hazardous materials.

5.2(1) The minister may, by written order, require any person owning or having custody or control of any hazardous material in any location within the province

(a) to remove the hazardous material from the location; or

(b) to dispose of the hazardous material in accordance with the regulations or as prescribed in the order; or

(c) to take special precautions in respect of the use, storage, handling or transportation of the hazardous material notwithstanding any regulation respecting the use, storage, handling or transportation of the hazardous material;

or to do any of those things.

En. S.M. 1980, c. 59, s. 3.

Failure to comply with order.

5.2(2) Where any person fails to comply with an order made under subsection (1) in respect of a hazardous material within the time prescribed in the order, the minister may cause the hazardous material to be seized and to be disposed of or otherwise dealt with as he, in his absolute discretion, may determine and the costs incurred by the government in seizing, disposing or otherwise dealing with the hazardous material is a debt due and recoverable by Her Majesty the Queen from the person who owned the hazardous material.

En. S.M. 1980, c. 59, s. 3.

Pre-existing licences, agreements and permits.

6(1) Where,

- (a) prior to the fifteenth day of June, 1968, any person entered into an agreement with the Government of Manitoba whereby the deposit, discharge, or emission by that person of contaminants to an unlimited degree or to a level specified in the agreement was allowed for a period extending beyond the fifteenth day of June, 1968, or any person was authorized or permitted under any Act of the Legislature to contaminate the environment for a period extending beyond the fifteenth day of June, 1968;

- (b) prior to the coming into force of this Act, a person obtained a licence from the commission which shall be deemed to be an order of the commission under this Act for the deposit, discharge or emission of contaminants; the Lieutenant Governor in Council may, notwithstanding the agreement, authorization, permit or licence impose upon such person any additional requirements that the Lieutenant Governor in Council deems fit; and notice of additional requirements shall be given to the licensee outlining the justification therefor.

Failure to comply with requirements.

6(2) Where a person fails to comply with any additional requirements imposed upon him by the Lieutenant Governor in Council under subsection (1), the Lieutenant Governor in Council may cancel the agreement, authorization, permit or licence as the case may be.

S.M. 1972, c. 76, s. 6.

Penalty.

7 Any person who contravenes or violates any provision of this Act or the regulations or fails to comply with any order of the commission or the minister made pursuant to this Act or the regulations, is guilty of an offence and is liable on summary conviction

- (a) in the case of an individual to a fine not exceeding five hundred dollars; and
- (b) in the case of a corporation to a fine not exceeding five thousand dollars.

S.M. 1972, c. 76, s. 7; Am. S.M. 1978, c. 17, s. 1.

Each day a separate offence.

8 Where a contravention or violation of any provision of this Act or the regulations, or a failure to comply with an order of the commission made under this Act, continues for more than one day, the offender is guilty of a separate offence for each day that the contravention, violation, or failure continues.

S.M. 1972, c. 76, s. 8.

Commission established.

9(1) The Clean Environment Commission, shall consist of not less than three members appointed by the Lieutenant Governor in Council, one of whom shall be designated by the Lieutenant Governor in Council as chairman of the commission and one as vice-chairman of the commission.

Term of members.

9(2) Each member of the commission shall hold office for such term as may be fixed by the Lieutenant Governor in Council and thereafter until his successor is appointed.

Remuneration.

9(3) Each member of the commission shall be paid such remuneration as is fixed by the Lieutenant Governor in Council and such travelling and out-of-pocket expenses necessarily incurred by him in discharging his duties as a member of the commission as may be approved by the Minister of Finance.

Powers of Commissioners.

9(4) Subject to subsection (5), for the purpose of carrying out its duties and functions, the commission shall have the like protection and powers, and be subject to like requirements, as are conferred on, or required of, commissioners appointed under Part V of The Manitoba Evidence Act.

Application of section 88 of The Manitoba Evidence Act.

9(5) Section 88 of The Manitoba Evidence Act does not apply to the commission.

Quorum.

9(6) Subject to subsection (7), a majority of the members constitute a quorum at all meetings of the commission.

Two members may hear evidence.

9(7) Subject to subsection (8), the commission may authorize a hearing to be held before not less than two commissioners for the purpose only of hearing evidence in connection with any matter before the commission and the commissioners shall place before the commission at a subsequent meeting a certified copy of the transcript of the evidence taken at such a hearing.

No order unless a quorum present.

9(8) No order shall be made unless a quorum of the commission is present at a meeting of the commission.

Rules of procedure.

9(9) The commission may make rules governing its procedure.

Continuation of the commission.

9(10) The Clean Environment Commission subsisting at the time of the coming into force of this Act shall continue as the commission for the purposes of the Act.

S.M. 1972, c. 76, s. 9.

Costs.

10 All moneys required to be expended for the purposes of this Act and all costs incurred in carrying out the duties and functions of the commission, including the remuneration and expenses of the members of the commission shall be paid from and out of the Consolidated Fund with moneys authorized by an Act of the Legislature to be so paid and applied.

S.M. 1972, c. 76, s. 10.

Annual report of commission.

11(1) The commission shall prepare and submit to the minister an annual report on matters dealt with by the commission during the immediately preceding year including

- (a) the investigations and hearings conducted by the commission;
- (b) the orders made;
- (c) regulations made under this Act;
- (d) a review of the state of the environment;
- (e) such other matters as the minister may require.

Report tabled.

11(2) Upon receiving the report, the minister shall, if the Legislature is then in session, lay it before the Legislature forthwith, and if the Legislature is not then in session, lay it before the Legislature within fifteen days after the commencement of the next ensuing session thereof.

S.M. 1972, c. 76, s. 11.

Delegation of powers to City of Winnipeg.

12(1) The Lieutenant Governor in Council may delegate such part of the powers of the commission as he deems advisable to The City of Winnipeg for such period of time and subject to such conditions as he may deem fit.

Appeal.

12(2) Section 17 applies, mutatis mutandis, to any decision or order made by The City of Winnipeg in the exercise of its powers under subsection (1).
S.M. 1972, c. 76, s. 12.

Investigations.

13(1) The commission may, unless otherwise directed by the minister, for the purposes of carrying out its duties and functions under the Act, investigate any matter respecting the environment and for that purpose hold such hearings as it deems advisable.

Limitation on number of operations.

13(2) The Lieutenant Governor in Council may for environmental reasons restrict or limit the number of industries, undertakings, plants or processes that may be permitted to be operated in the province, or any part thereof for such period of time as he deems advisable.

S.M. 1972, c. 76, s. 13.

Approval of proposal required.

14(1) No person shall, unless exempted under section 14.1 or by the regulations, construct premises or alter same or set into operation any industry, undertaking, plant or process that will or may result in the discharge or emission of any contaminant into the environment, unless he files his proposal with the department on a form approved by the minister; and upon the filing of the proposal the minister

- (a) may approve the proposal, provided the proposal complies with the provisions of the Act and regulations; or
- (b) subject to clause (a) shall refer the proposal to the commission to be dealt with in accordance with subsection (2) or (3).

En. S.M. 1974, c. 41, s. 2; Am. S.M. 1976, c. 17, s. 1.

Consideration of proposal.

14(2) Upon receipt of a proposal under subsection (1), the commission shall consider the proposal and

- (a) where the commission is satisfied that the proposal meets the limits prescribed by the regulations, it shall so advise the person who submits the proposal under subsection (1); and
- (b) where the commission is satisfied that the proposal does not meet the limits prescribed by the regulations, it shall so advise the person who submits the proposal under subsection (1) and the commission shall not approve the proposal until it meets the limits prescribed by the regulations.

Prescribing limits, terms and conditions where no regulations in force.

14(3) Where, at the time of the receipt of the proposal under subsection (1), limits, terms and conditions have not been prescribed by the regulations, the commission shall deal with the proposal referred to it under clause (1)(b) to prescribe limits, terms and conditions and the person shall comply with the limits, terms and conditions prescribed by the commission.

Am. S.M. 1974, c. 41, s. 2; S.M. 1980, c. 59, s. 4.

Applications in respect of existing operations.

14(4) Where, on the coming into force of this Act, a person is operating an industry, undertaking, plant or process that is contaminating the environment he shall, unless exempted under section 14.1 or the Lieutenant Governor in Council otherwise directs on a form approved by the minister, register the industry, undertaking, plant or process with the department and the minister

- (a) may approve the industry, undertaking, plant or process, if it complies with the provisions of the Act and regulations; or
- (b) where he does not grant his approval under clause (a) he shall refer the matter to the commission to be dealt with as an application in accordance with subsection (5).

En. S.M. 1974, c. 41, s. 2; Am. S.M. 1976, c. 17, s. 2.

Disposition of application.

14(5) On receipt of an application under subsection (4), the commission shall consider the application and

- (a) where the commission is satisfied that the applicant is discharging contaminants within limits, terms and conditions prescribed by the regulations the commission shall so advise him;
- (b) where the commission is satisfied that the applicant is discharging contaminants in violation of the limits, terms or conditions prescribed by the regulations the commission shall so advise him and require him to comply with the prescribed limits, terms and conditions within such time as the commission may specify;
- (c) where limits, terms and conditions are not prescribed by regulations the commission shall prescribe limits, terms and conditions and the applicant shall comply with the limits so prescribed.

Am. S.M. 1980, c. 59, s. 5.

Hearings to determine compliance.

14(6) The commission may, on its own accord or upon complaint by any person, at any time hold a hearing to ascertain whether any person is complying with the limits, terms or conditions prescribed by the commission, with the provisions of this Act and the regulations and may make such order as it deems necessary or advisable.

Am. S.M. 1980, c. 59, s. 6.

Variation requires a hearing.

14(7) Unless an appeal has been taken from an order of the commission, the commission may, on its own accord vary the order but it shall not do so unless it first holds a hearing for that purpose.

Suspension of an order.

14(8) The commission may, without notice or hearing, suspend in whole or in part any order issued by it after the coming into force of this Act for a period not exceeding fourteen days and the suspension shall take effect from the date on which the person to whom such order is issued is notified of the suspension.

Hearing to extend suspension.

14(9) The period of suspension under subsection (8) shall not be extended by the commission unless the commission holds a hearing of which the person to whom the order is issued is given at least seven days notice and at which time he is given an opportunity to appear and be heard, but after the hearing the commission may

- (a) extend the suspension for such period as it deems advisable or until the commission is satisfied that the person has complied with any terms, conditions, or requirements prescribed by the commission; or
- (b) vary the order and issue such other order as it deems fit.

Prohibition order.

14(10) The commission may, without a hearing, order any person who in the opinion of the commission is contaminating the environment to abate, control or cease contaminating the environment.

Cleaning of the affected area.

14(11) Where the commission considers it advisable, it may order a person who is contaminating or has contaminated the environment, to clean at his own cost the area affected and restore the environment to a condition satisfactory to the commission within a period specified by the commission.

Failure to comply.

14(12) Where a person fails to comply with the order of the commission made under subsection (10) or subsection (11), the commission may take such steps as it considers necessary to abate or control the discharge, deposit, or emission of the contaminant or to clean the area affected by the discharge, deposit or emission of the contaminant and restore the environment to a condition satisfactory to the commission and the costs incurred in such abatement, control, cleaning or restoration shall be a debt due and recoverable by Her Majesty the Queen from the person who failed to comply with the order.

Cleaning of area in emergency situation.

14(13) Notwithstanding subsection (10) or subsection (11) where the minister is of the opinion that it is necessary to take immediate action in the public interest, he may take such steps or cause such steps to be taken as are necessary to abate or control the discharge, deposit or emission of any contaminant from the industry, undertaking, plant or process, to clean the area affected by such discharge, deposit or emission and restore the environment to a condition satisfactory to the minister and the costs incurred in the investigation, abatement, control, cleaning or restoration are a debt due to the government by the person responsible for the deposit, discharge or emission of the contaminant and are recoverable by the government in a court of competent jurisdiction.

Am. S.M. 1978, c. 17, s. 2.

14(14)

Repealed.

S.M. 1978, c. 17, s. 3.

Notice of hearing.

14(15) Where the commission is required or authorized under this Act to hold a hearing the commission shall in writing notify

- (a) the applicant; and
- (b) any other person to whom the commission feels notice should be given; the date, time, and place of the hearing and shall by advertisement in such newspaper or other media notify the general public of the hearing.

Commission may make an order notwithstanding exemption.

14(16) Notwithstanding that a person operating an industry, undertaking, plant or process has been exempted by the regulations from the requirements of subsection (1) or (4) or both, the commission shall, where new evidence warrants, hold a hearing and make such order as it deems advisable prescribing limits with respect to that industry, undertaking, plant or process, as the case may be; but any such order shall be confined to matters not expressly covered by the regulations.

En. S.M. 1974, c. 41, s. 2.

S.M. 1972, c. 76, s. 14; Am. S.M. 1974, c. 41, s. 2; S.M. 1976, c. 17, ss. 1 & 2; S.M. 1978, c. 17, ss. 2 & 3; S.M. 1980, c. 59, ss. 4-6.

Exemption from approval under subsection 14(1).

14.1(1) Where the council of a municipality intends to begin operating any industry, undertaking, plant or process that will or is likely to result in the discharge of contaminant into the environment if

- (a) the operation of the industry, undertaking, plant or process is not likely to result in a demonstrable effect on the environment beyond the municipality;
- (b) the municipality takes reasonable steps to prevent or reduce the effect on the environment beyond the municipality of contaminant discharge into the environment as a result of the operation of the industry, undertaking, plant or process;
- (c) the municipality, before it begins operating the industry, undertaking, plant or process, files with the department a statement describing the industry, undertaking, plant or process and setting out the dates it intends to begin the operation; and

- (d) the municipality, before it begins operating the industry, undertaking, plant or process, files with the department a statement containing a detailed assessment of the possible effect on the environment within and beyond the municipality of the operation of the industry, undertaking, plant or process, prepared in conformity with guidelines supplied by the department;

subject to subsection (4), the municipality may begin operating the industry, undertaking, plant or process without reference to or complying with subsection 14(1).

En. S.M. 1976, c. 17, s. 3; S.M. 1977, c. 57, s. 4.

Exemption from approval under subsec. 14(4).

14.1(2) Where the council of a municipality is operating any industry, undertaking, plant or process that was in operation prior to November 1, 1972, and that results in the discharge of contaminant into the environment, if

- (a) the operation of the industry, undertaking, plant or process does not result in a demonstrable effect on the environment beyond the municipality;
- (b) the municipality has taken reasonable steps to prevent or reduce the effect on the environment beyond the municipality of the operation of the industry, undertaking, plant or process;
- (c) the municipality filed with the department a statement describing the industry, undertaking, plant or process; and
- (d) the municipality filed with the department a statement containing an assessment of the effect that the operation of the industry, undertaking, plant or process has had on the environment within and beyond the municipality, prepared in conformity with guidelines supplied by the department;

subject to subsection (4), the municipality may continue the operation of the industry, undertaking, plant or process without reference to or complying with subsection 14(4).

En. S.M. 1976, c. 17, s. 3.

Proceeding under subsec. 14(1).

14.1(3) Notwithstanding subsections (1) and (2), a municipality may elect to proceed under subsection 14(1) or (4), as the case may be.

En. S.M. 1976, c. 17, s. 3.

Order of the minister to cease, etc.

14.1(4) Where the minister is of the opinion that an industry, undertaking, plant or process in respect of which a municipality has filed statements with the department under subsection (1) or (2) has or is likely to have a demonstrable effect on the environment beyond the municipality, he may order the municipality not to begin or to cease operating the industry, undertaking, plant or process until the municipality complies with subsection 14(1) or (4), as the case may be, and thereupon the exemption granted under subsection (1) or (2) ceases.

En. S.M. 1976, c. 17, s. 3.

Change in manner of operation.

14.1(5) For the purposes of this section, a change in the manner or method of operating any industry, undertaking, plant or process, shall be considered to be beginning operation of the industry, undertaking, plant or process as of the date on which the change takes place.

En. S.M. 1976, c. 17, s. 3; S.M. 1977, c. 57, s. 4.

Prescribing limits, terms and conditions.

15.1(1) The commission may by order prescribe limits, terms and conditions for the purposes of this Act.

Am. S.M. 1980, c. 59, s. 7.

Notice of application.

15.1(2) Before prescribing limits, terms and conditions the commission shall by advertisement in such newspaper or other media as the commission deems fit give notice of its intention to prescribe limits, terms and conditions.

Am. S.M. 1980, c. 59, s. 7.

Notification to make representation.

15.1(3) Any person who is affected or likely to be affected by an order of the commission under subsection (1) and wishes to make representation to the commission may, not later than the date set out in the notice, in writing so notify the commission.

Prescribing limits, terms and conditions without hearing.

15.1(4) Where the commission does not receive any notification or receives a notification under subsection (3) that is subsequently withdrawn, it may prescribe limits, terms and conditions without holding a hearing; and where it receives a notification under subsection (3) it shall hold a hearing before prescribing limits, terms and conditions.

Am. S.M. 1980, c. 59, s. 7.

S.M. 1972, c. 76, s. 15; Am. S.M. 1980, c. 59, s. 7.

Proposal of abatement project.

15.1(1) The council of a municipality may, by resolution, approve a proposal for an abatement project within the municipality.

En. S.M. 1980, c. 59, s. 8.

Proposal to outline the abatement project.

15.1(2) A proposal for an abatement project shall outline the details of the abatement project and shall include

- (a) a description of the undertaking or premises to be removed and relocated;
- (b) a description or a plan of any land to be acquired for the purposes of relocation of the undertaking or premises;
- (c) a description of the methods planned by the municipality for the direction and control of the use of the land in the area affected by the abatement project, including zoning controls, building controls and standards of occupancy of buildings;

- (d) a description of any changes in any planning scheme, building controls or development plan affecting a municipality that are required in conjunction with the carrying out of the proposed abatement project;
- (e) the estimated cost of the abatement project; and
- (f) a proposal for the planning and use of the lands that are to be acquired.

En. S.M. 1980, c. 59, s. 8.

Submission of proposal to minister.

15.1(3) Upon approving a proposal for an abatement project, the municipality shall submit the proposal to the minister who shall refer the proposal to the commission for its advice and recommendations.

En. S.M. 1980, c. 59, s. 8.

Public hearing by commission.

15.1(4) Upon receiving a proposal for an abatement project from the minister, the commission shall fix a suitable time and place for public hearing with respect thereto and cause reasonable notice thereof to be given by publication in at least one issue of a newspaper having a general circulation in the municipality in which the abatement project is proposed and by sending a notice thereof to the municipality and to every occupant of and every owner of an estate or interest in the lands, undertakings or premises that are intended to be removed and relocated or that are intended to be acquired to carry out the proposed abatement project.

En. S.M. 1980, c. 59, s. 8.

Parties to hearing.

15.1(5) The parties to the hearing before the commission shall include the municipality, each person who has been served with a notice in accordance with subsection (4) and such other persons or groups of persons whose lands the commission may consider are adversely or injuriously affected by the undesirable environmental conditions sought to be abated by the abatement project.

En. S.M. 1980, c. 59, s. 8.

Report to minister.

15.1(6) After conducting a hearing with respect to a proposed abatement project, the commission shall make a written report to the minister setting out its recommendations with respect to the abatement project or any part of the proposal with respect thereto.

En. S.M. 1980, c. 59, s. 8.

Approval of abatement project.

15.1(7) Upon receiving a report from the commission with respect to an abatement project, the minister may approve the abatement project in whole or in part or with such variations and subject to such terms and conditions as he deems advisable in the public interest or he may refuse to approve the abatement project.

En. S.M. 1980, c. 59, s. 8.

By-law authorizing abatement project.

15.1(8) Where the minister approves an abatement project, the municipality may, by by-law, authorize the abatement project to be carried out within the municipality in accordance with the terms and conditions, variation, or other provisions of the approval of the minister.

En. S.M. 1980, c. 59, s. 8.

Expropriation of lands.

15.1(9) Where a municipality authorizes an abatement project to be carried out, if the approval of the minister included an approval for the acquisition of lands by the municipality for the purposes of relocation of an undertaking or premises as part of the abatement project, the municipality may proceed to acquire the lands by purchase, expropriation or otherwise.

En. S.M. 1980, c. 59, s. 8.

Application of Expropriation Act.

15.1(10) Where a municipality takes proceedings to acquire lands for the purposes of an abatement project by expropriation, The Expropriation Act applies thereto except that, notwithstanding any provision of that Act,

- (a) the provisions of Schedule A of that Act pertaining to a hearing by an inquiry officer do not apply in respect of the expropriation; and
- (b) the owner of the land expropriated, if he intends in good faith to relocate in some other place, may elect to have the due compensation payable by the municipality assessed on the basis of the reasonable cost of equivalent reinstatement as provided by subsection 26(3) of that Act, and the due compensation shall be assessed accordingly, notwithstanding that the land may not be devoted to a purpose of such a nature that there is no general demand or market for land of that purpose.

En. S.M. 1980, c. 59, s. 8.

Order binding on purchaser.

15.2 An order issued pursuant to the Act with respect to an industry, undertaking, plant or process, is binding on a person who purchases or otherwise acquires that industry, undertaking, plant or process notwithstanding the change of name thereof.

En. S.M. 1974, c. 41, s. 3.

Appointment of environment officers.

16(1) The minister may appoint or designate persons as environment officers for the purposes of this Act.

Powers of environment officers.

16(2) Any environment officer may at any reasonable time and where requested, upon presentation of an identification card issued by the minister, for the purpose of enforcing this Act or the regulations or any order made under this Act or the regulations

- (a) without a warrant, enter any place or premises, other than a dwelling, in which he has reason to believe a contaminant is being produced or from which he has reason to believe a contaminant is being discharged or emitted, and search the place or premises;
- (b) inspect any installation, plant and machinery and inspect and test any process of production or manufacture and any raw or manufactured substance or material used therein or relating thereto that he has reason to believe may be producing, discharging, or emitting contaminants and take and retain samples of any raw or manufactured substance or material or discharge, deposits, effluents, or emissions for the purpose of evidence; and
- (c) examine any records or documents relating to the acquisition, storage, transportation, use, handling, discharge, sale or disposal of any contaminant or hazardous material on the premises or of any other substance on the premises which may be converted into or used to produce a contaminant or hazardous material and, for the purpose of making copies of the records or documents, remove them for as long as is necessary to make the copies.

Am. S.M. 1980, c. 59, s. 9.

Powers of commission.

16(3) The chairman, or any member of the commission with the written authorization of the chairman, may exercise the powers of any environment officer under subsection (2).

Special powers in environmental accidents.

16(4) For the purposes of carrying out investigations of or performing any tasks in respect of an environmental accident, an environment officer may

- (a) enter any land or premises without the consent of the owner or occupant thereof;
- (b) seize any hazardous materials or any other substances which having regard to the environmental accident is or may be or may create a hazard to human life or health, to other living organisms or to the physical environment; and
- (c) move property, erect structures, make excavations, drill holes and take such other actions as may be necessary to discover the extent of the hazards created by the environmental accident, to reduce the hazards caused thereby, to abate or control any discharge or release of contaminants, or to clean and restore the environment, or to any or all of those things.

En. S.M. 1980, c. 59, s. 10.

Obstruction.

16(5) No person shall obstruct or attempt to obstruct an environment officer in the performance of his duties or the exercise of his authority under this Act.

En. S.M. 1980, c. 59, s. 10
S.M. 1972, c. 76, s. 16; Am. S.M. 1980, c. 59, ss. 9 & 10.

Order of minister re closure etc.

16.1(1) Where, on the report of an environment officer, the minister is satisfied that the operation of an industry, undertaking, plant or process, is contaminating the environment in contravention or violation of this Act, the regulations or any order made under this Act, and that the continued contravention or violation would cause serious loss or injury to any person or to property or would cause serious or lasting damage to the environment, he may order the person responsible for the operation

(a) to stop the operation, or any part thereof, until it is brought into compliance with this Act, the regulation, or the order, as the case may be; and

(b) to close the premises in which the operation is carried on, or a part thereof, until the operation is brought into compliance with this Act, the regulation or the order of the commission, as the case may be, except for the purposes of work that is necessary to bring the operation into compliance with the Act, the regulations or the order, as the case may be; or to do either of those things, and the order becomes effective from the time notice thereof is given to the person responsible for the operation to which the order relates or to the person in charge of the premises in which the operation is carried on and, subject to subsection (2), ceases to be effective on the expiry of 21 days after the date the notice is given or such earlier time as the minister may withdraw or cancel the order.

En. S.M. 1978, c. 17, s. 4.

Appeal.

16.1(2) Any person responsible for an operation in respect of which an order has been made under subsection (1) may, by application to a judge of the Court of Queen's Bench, appeal the order and the judge, on the application, may quash the order, confirm it or confirm it with variations.

En. S.M. 1978, c. 17, s. 4.

Injunction against committing offence.

16.2(1) On application of the minister, or of any person affected by the contamination, and upon being satisfied that the operation of any industry, undertaking, plant or process is contaminating the environment in contravention or violation of this Act, the regulations, or any order made under this Act, a judge of the Court of Queen's Bench may order the person responsible for the operation

(a) to stop the operation, or a part thereof, until it is brought into compliance with this Act, the regulation or the order of the commission, as the case may be; and

(b) to close the premises in which the operation is carried on, or a part thereof, until the operation is brought into compliance with this Act, the regulation or the order of the commission, as the case may be, except for the purposes of work that is necessary to bring the operation into compliance with the Act, the regulation or the order of the commission, as the case may be;

or to do either of those things, and the judge, in making such an order, may give directions as to what steps are to be taken to bring the operation into compliance with this Act, the regulations, or the order as the case may be.

En. S.M. 1978, c. 17, s. 4.

Order not substitution for prosecution.

16.2(2) The remedy for which provision is made in this section is in addition to, and not in substitution for, any penalties for which provision is made in this Act for a contravention or a violation of this Act, the regulation, or an order of the commission.

En. S.M. 1978, c. 17, s. 4.

Appeal.

17(1) Any person affected by an order of the commission made subsequent to the coming into force of this Act may, within thirty days from the date of the order, in writing, appeal the order to the minister who may refer any matter or question arising out of the appeal to The Municipal Board for its advice and recommendations.

Am. S.M. 1976, c. 17, s. 4.

Stay of order under appeal.

17(2) Where an appeal is made to the minister under subsection (1), the minister may stay the order appealed against in whole or in part pending the final disposition of the appeal under subsection (3).

En. S.M. 1974, c. 41, s. 4.

Disposition of appeal.

17(3) Where an appeal is made to the minister under subsection (1), the minister, on such considerations as he deems advisable including the advice and recommendations of The Municipal Board may, subject to the approval of the Lieutenant Governor in Council

- (a) cancel the order appealed against; or
- (b) direct the commission to vary the order appealed against; or
- (c) direct the commission to issue such other order as he deems advisable; or
- (d) dismiss the appeal; or
- (e) refer the matter back to the commission and direct the commission to conduct a new hearing and make a new order in respect of the matter;

and the decision of the minister on an appeal is final and subject to no further appeal.

En. S.M. 1974, c. 41, s. 4; Am. S.M. 1976, c. 17, s. 5.

Variation of order on new evidence.

17(3.1) Notwithstanding subsection 17(3), where a new evidence warrants, the minister may direct the commission to hold a hearing with respect to any operation, industry, undertaking, plant or process and after the hearing, the commission shall submit its report and recommendations to the minister and the minister may, subject to the approval of the Lieutenant Governor in Council, vary the decision made under subsection 17(3).

En. S.M. 1974, c. 41, s. 4.

Notice of hearing by Municipal Board.

17(4) Where under subsection (1), a matter is referred to The Municipal Board, it shall consider the matter, and where it considers it advisable, it may hold a hearing for the purpose in which case it shall

- (a) give at least seven days notice in writing to the parties concerned and to any other person to whom The Municipal Board feels notice should be given; and
- (b) by advertising in a newspaper having general circulation in the area and through such other media as it deems advisable, notify the general public; of the date, time and place of the hearing.

Am. S.M. 1974, c. 41, s. 4; Am. S.M. 1975, c. 42, s. 11; Am. S.M. 1976, c. 17, s. 6.

Time for submission of report by Municipal Board.

17(5) Where under subsection (1), a matter is referred to The Municipal Board for its advice and recommendations, The Municipal Board shall not later than thirty days from the date of the reference, submit its report and recommendations to the minister, except that where The Municipal Board decides to hold a hearing for the purpose, its report and recommendations shall be submitted to the minister not later than ninety days from the date of the reference.

Am. S.M. 1974, c. 41, s. 4.

Extension of time.

17(6) Where The Municipal Board considers the time periods in subsection (5) to be insufficient, the minister may, upon request of The Municipal Board, grant such extension of time as he may deem fit.

En. S.M. 1974, c. 41, s. 4.

Hearing de novo by commission.

17(7) Where, under clause (3)(e), a matter is referred back to the commission, with a direction to conduct a new hearing and make a new order in respect of the matter, the commission shall conduct a hearing de novo in respect of the matter, but if any party to the hearing may request that any evidence or submission received at an earlier hearing in respect of the same matter be deemed to have been submitted at the hearing de novo and the commission may, in its discretion, grant the request without interfering with the right of any other party to the hearing to submit further evidence or make further submissions to rebut the evidence or submissions received at the earlier hearing.

En. S.M. 1976, c. 17, c. 7.

S.M. 1972, c. 76, s. 17; Am. S.M. 1974, c. 41, s. 4; Am. S.M. 1975, c. 42, s. 11;

Am. S.M. 1976, c. 17, ss. 4-7.

Regulations.

18(1) For the purpose of carrying out the provisions of this Act according to their intent, the Lieutenant Governor in Council may make such regulations as are ancillary thereto and not inconsistent therewith; and every regulation made under, and in accordance with the authority granted by this Act, has the force of law; and without restricting the generality of the foregoing, the Lieutenant Governor in Council may make such regulations not inconsistent with any other provision of this Act

- (a) respecting the procedure to be followed with regard to applications for prescribing limits, terms and conditions and the objections thereto and to appeals to the minister;
- (b) respecting fees payable on application and objection thereto and fees payable with regard to hearings and meetings of the commission and the refunding of all or part of those fees;
- (c) respecting the design, construction, adaptation, alteration, operation, maintenance, and installation of systems, processes, or works to abate or control contamination;
- (d) respecting the proximity of operations that discharge, deposit or emit contaminants, to buildings, areas of land set aside for special use or used for recreational purposes, topographical features and body of water;
- (e) respecting the method of collection, treatment, distribution and disposal of contaminants;
- (f) respecting the concentration and housing of livestock;
- (g) respecting the treatment of contaminants prior to discharge, emission or release thereof;
- (h) prescribing limits of contaminants that may be discharged, emitted, or released from any industry, operation, undertaking, plant or process and prescribing terms and conditions applying to the discharge, emission or release;
- (i) respecting the use of pesticides or any other product or substance that may contaminate the environment;
- (j) setting out industries, operations, undertakings, plants or processes in respect of which a proposal is not required to be submitted under subsection (1) of section 14 or an application is not required under subsection (4) of that section;
- (k) respecting the limits of contaminants in the environment;
- (l) requiring certain industries, operations, undertakings, plants or processes to register with the department;
- (m) respecting bathing premises;
- (n) respecting the site, construction, plumbing, lighting, ventilation, heating, furnishings, equipment, and sanitary condition of buildings and auto trailer houses used for human habitation or for business purposes and the inspection thereof;
- (o) respecting the control and abatement of insanitary conditions;
- (p) respecting the protection of food and water, and the contamination of food and water in excess of prescribed limits;
- (q) designating substances as hazardous materials;

- (r) respecting the classification, use, storage, handling, transportation and final disposal of hazardous materials;
- (s) respecting the reporting of environmental accidents;
- (t) respecting the storage, handling, transportation and use of any products or substances that may contaminate the environment and respecting the disposal of containers that have been used for the storage or distribution of such products or substances.

Am. S.M. 1974, c. 41, s. 5; S.M. 1980, c. 59, s. 11.

Effect of regulations on certain orders.

18(2) Where an order has been made by the commission in respect of the operation of a particular industry, undertaking, plant or process and, after the date on which the order was made, a regulation is made fixing standards, limits, terms or conditions which apply to that operation, the order of the commission ceases, upon the date that the regulation comes into force, to be effective in so far as it fixes standards, limits or conditions different from those fixed in the regulation.

En. S.M. 1978, c. 17, s. 5; Am. S.M. 1980, c. 59, s. 12.

S.M. 1972, c. 76, s. 18; Am. S.M. 1974, c. 41, s. 5; S.M. 1978, c. 17, s. 5; S.M. 1980, c. 59, ss. 11 & 12.

Regulations may apply to part of province.

18.1 A regulation, or any provision thereof, may be made to apply to a part of the province only.

En. S.M. 1974, c. 41, s. 6.

Agreements.

19 With the approval of the Lieutenant Governor in Council, the minister may enter into agreements with

- (a) the Government of Canada, or any minister or agency of the Government of Canada; or
- (b) the government of any other province of Canada, or any minister or agency of the government of any other province of Canada;

or both respecting the control or prevention of the deposit, discharge or emission of contaminants into the environment.

S.M. 1972, c. 76, s. 19.

Agreement for abatement project.

19.1(1) With the approval of the Lieutenant Governor in Council, the minister may enter into an agreement with any municipality that intends to proceed with an abatement project.

En. S.M. 1974, c. 41, s. 7.

Provisions of agreement.

- 19.1(2)** An agreement entered into pursuant to subsection (1)
- (a) may set out the approved capital cost for the abatement project which may include the cost of acquiring the land and any interest on moneys advanced by any party as progress payments;
 - (b) shall provide for the proportions in accordance with which the parties will contribute to the approved capital cost, which in the case of the province shall not exceed 50%; and
 - (c) shall provide that

- (i) any moneys received from the sale, lease or other disposition of lands or buildings in the abatement project shall be shared between the parties to the agreement in the same proportions as the parties thereto share in the approved capital cost, and

- (ii) where land acquired by the municipality pursuant to the abatement project is retained by the municipality the land shall be valued in the manner prescribed in the agreement and the retention of the land shall be deemed a sale of the land at a price equal to the value thereof and the deemed proceeds thereof shall be paid by the municipality and be shared in accordance with sub-clause (i);

- (d) may include as a condition precedent to any payment by the province that the municipality shall

- (i) adopt such controls of the use of the land in the municipality, including zoning, building controls and standards of occupancy of buildings, and

- (ii) have enacted such changes in any planning scheme, building controls or development plan affecting the municipality,

as the minister may deem necessary in connection with the abatement project and for the avoidance of the development of undesirable environmental conditions in the municipality.

En. S.M. 1974, c. 41, s. 7.

Powers of municipality.

19.2(1) A municipality, if authorized to do so by a by-law passed by the council of the municipality, may enter into an agreement with the minister of the Government of Manitoba respecting any abatement project provided in section 19.1.

En. S.M. 1974, c. 41, s. 7.

Provisions of agreement.

19.2(2) Where a municipality enters into an agreement authorized under this Act, it may, by by-law

- (a) borrow moneys necessary to enable it to carry out the agreement;
- (b) issue debentures to secure moneys so borrowed;
- (c) assume as a debt of the municipality, and pay, in accordance with the terms of the agreement, any principal or interest payments which the municipality is obligated to pay under the agreement;

or do all or any of those things, and may impose special levies required to pay principal and interest payable on any debt incurred or debentures issued in accordance with this subsection.

En. S.M. 1974, c. 41, s. 7.

Manner of giving notice.

- 20** Where, under this Act, the commission is required to give notice to any person for any reason, and the manner of giving notice is not indicated, the commission may give the notice to the person
- (a) by personal service on the person; or
 - (b) by sending the notice by registered prepaid mail addressed to the last address of the person known to the commission; or
 - (c) in such other manner as a Judge of the County Court of the County Court district in which the site affected by the matter of which notice is required is situated may, on application, direct.
- S.M. 1972, c. 76, s. 20.

Crown bound by Act.

- 21** The Crown or any agency of the Crown is bound by this Act.
- S.M. 1972, c. 76, s. 21.

Appeals under former Act.

- 22** Where an appeal was commenced under the provisions of the Act for which this Act is substituted, the appeal shall be heard and completed in accordance with the provisions of that Act.
- S.M. 1972, c. 76, s. 22.

Place in Continuing Consolidation.

- 23** This Act may be referred to as chapter C130 of the Continuing Consolidation of the Revised Statutes of Manitoba, 1970.
- S.M. 1972, c. 76, s. 23.

Repeal.

- 24** The following Acts or parts of the Acts are repealed:
- (a) The Clean Environment Act, being chapter C130 of the Revised Statutes of Manitoba, 1970.
 - (b) An Act to amend The Clean Environment Act, being chapter 62 of the Statutes of Manitoba, 1970.
 - (c) Section 10 of The Statute Law Amendment Act, being chapter 82 of the Statutes of Manitoba, 1971.
- S.M. 1972, c. 76, s. 24.

Commencement of Act.

- 25** This Act comes into force on a day fixed by proclamation.
- S.M. 1972, c. 76, s. 25.
- Note: This Act was proclaimed in force as of the 1st day of November, 1972.
See Manitoba Gazette, October 28th, 1972, page 1186.

GAS Volumes - Omega Waskada

PVT - 8-26 1-26

Solution GOR

51.04 m³/m³ (286.6 SCF/STB)

January Production (Omega Only)

L.Am Unit No 1 1725.6 m³

Non Unit LAm 8752.4 m³

Unit 1 8.0 m³

MC36B 583.5 m³

MC3aA 356.7 m³

MC3aC 51.5 m³

MC1A 19.2 m³

MC1B 14.1 m³

CONFIDENTIAL 1999.8 m³

13,510.8 m³ = 435.8 m³/d (2741 BPD)

TOTAL WASKADA FIELD 16,044.1 m³ 517.6 (3255 BPD)

SOLUTION GAS = 22,243.3 m³/day 26,415.8 m³/d

= 785,507 SCF/D 932,860 SCF/D

February Production:

12,567.3

448.8 m³/d (2823.1 BPD)

14,959.6

~~538.3~~ 538.3 m³/d

Solution gas =

22906.8 m³/d

27,269.2 m³

808,939 SCF/D.

962,997 SCF/D

March Production

14,559.6 = 469.7 m³/d 2954 BPD

23,971.7 m³/d

846,546 SCF/D

April Production

14,414.2 m³ = 480.5 3022 BPD

24,523.4 m³/d

866,028 SCF/D

Omega
Waskoda
Production

SOLUTION GAS PRODUCTION (MMCFD)

12
10
8
6
4
2

— Omega Only
— Tornu Field

4187
3837
3489
3140
2791
2442
2093
1396
698

OIL PRODUCTION
BPS.

JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.												
1982												1984												1986											

Waskada Gas Plant - Raw Gas Composition

<u>Component</u>	<u>Mole %</u>
N ₂	8.98
CO ₂	0.24
H ₂ S	0.20
C ₁	48.53
C ₂	22.63
C ₃	13.94
iC ₄	1.34
NC ₄	2.98
iC ₅	0.46
NC ₅	0.48
C ₆	0.15
C ₇₊	0.07

SOLUTION 60R

L. Amaranth

51.04 m³/m³ - 8-26+-26

Miss

61.5 m³/m³ - A12-71-25

Assume overall production stream $\left. \begin{array}{l} 70\% \text{ L.Am} \\ 30\% \text{ Miss} \end{array} \right\} 54.18 \text{ m}^3/\text{m}^3$
 \Downarrow
 304 SCF/STB

FUEL GAS

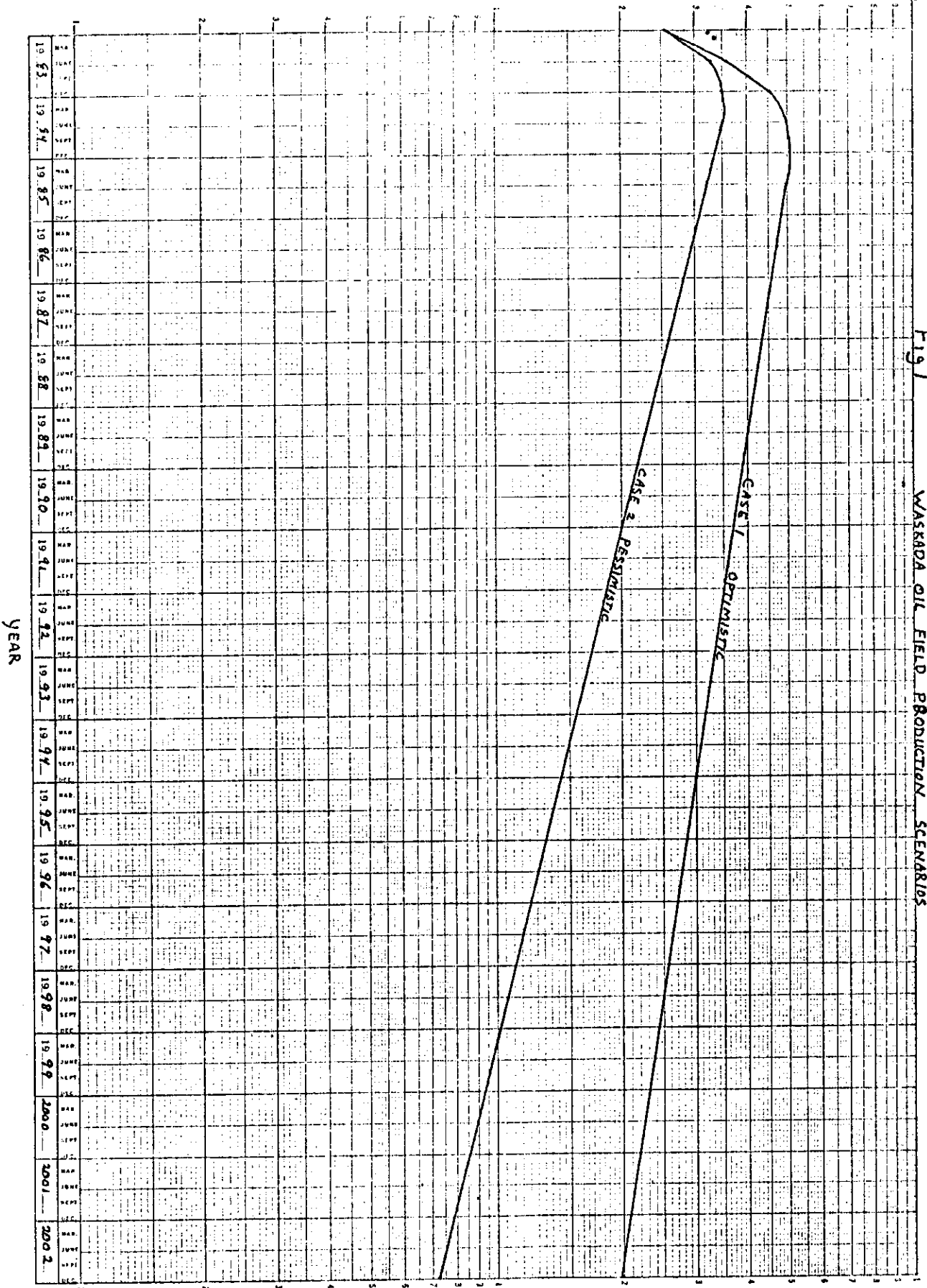
ASSUME 5000 CF/NR

$$= 120 \text{ nCFD.}$$

OIL PRODUCTION (BOPD)

Fig 1

WASKADA OIL FIELD PRODUCTION SCENARIOS



DATE: May 24, 1983

TO: H. Clare Moster

COMMENTS:

RE: Request for approval to construct
a gas plant at Waskada - Omega.

FROM: Ian Haugh

Take action and direct one copy to

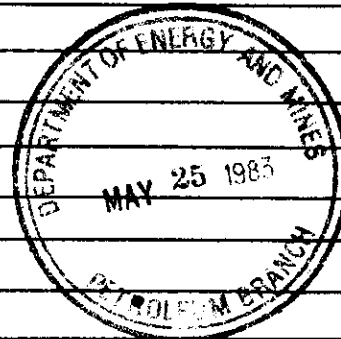
Dept.:

Larry Strachan, as requested.

Branch:

Address:

Telephone:



- | | |
|---|---|
| <input checked="" type="radio"/> Take action | <input type="radio"/> Circulate |
| <input type="radio"/> Per your request | <input type="radio"/> See me re attached |
| <input type="radio"/> Call me on this matter | <input type="radio"/> For your information |
| <input type="radio"/> Investigate and report | <input type="radio"/> Supply data for my reply |
| <input type="radio"/> For your revision or approval | <input type="radio"/> Reply direct with copy to me |
| <input type="radio"/> Return with comments or recommendations | <input type="radio"/> Draft reply for signature of: |



HYDROCARBONS Ltd.

TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

May 19, 1983

The Oil and Natural Gas Conservation Board
309 Legislative Bldg
Winnipeg, Manitoba
R3C 0V8

Attention: Dr. Ian Haugh
Deputy Chairman

Dear Sir:

RE: Waskada Area
LPG Recovery Plant Application

Enclosed for Board approval is Omega's detailed LPG Recovery Plant Application as prepared by Swinarton Engineering. A duplicate copy is enclosed for the Department of Environment.

The fabrication of the skid mounted plant and separate gas compressor is anticipated to take four months. Therefore, we remain concerned that without an expedient approval of our gas plant proposal it will become impossible for us to complete plant construction before this winter, thus preventing start up before Spring 1984.

In your consideration of our application we would like to emphasize the following points:

- 1) The proposed plant is very small relative to most of the gas plants in Alberta and it is the practice of the Energy Resources Conservation Board of Alberta to exercise increasing levels of flexibility with decreasing plant design capacity.
- 2) The proposed plant will decrease the environmental impact currently experienced at our 11-30 oil battery. While the sulphur emissions will be unchanged, ground level concentrations will be greatly reduced by flaring the acid gas through a 25 m stack. Maximum ground level concentrations will be maintained below the 0.170 ppm limit as currently prescribed by the Alberta Department of Environment.
- 3) We have mentioned several times in our application our intention of lean gas re-injection. This approval will be requested under separate cover, however, it is our view that approval of the gas plant should not be contingent on approval of a gas re-injection scheme.



x.c. - Marc Eliesen
J. F. Redgwell
May 25, 1983 - IH/ra

(2)

- 4) Omega's decision to invest over two and one-half million dollars in a LPG recovery plant is one based on economics with consideration of risk. In so far as the raw gas to be processed is the by product of a continuing oil recovery operation every day of delay in plant start up causes another 1.5 to 2.0 million cubic feet of raw gas feedstock to be flared at the oil battery. We therefore request your early consideration of this application.

Please advise if your require clarification or additional information.

Yours truly,

OMEGA HYDROCARBONS LTD.



George Patey
V.P. Production

GP/sp

cc: T. J. Hall



HYDROCARBONS Ltd.

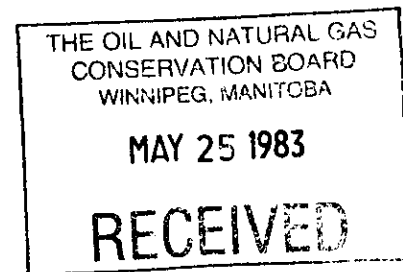
TELEPHONE: (403) 261-0743

630 - 330 FIFTH AVENUE S.W., CALGARY, ALBERTA T2P 0L4

May 20, 1983

The Oil and Gas Conservation Board
309 Legislative Building
Winnipeg, Manitoba
R3C 0V8

Attention: Dr. Ian Haugh
Deputy Chairman



Dear Sir:

RE: Waskada Area
LPG Recovery Plant Application

Regarding my letter dated May 19, 1983 pertaining to the subject application, the enclosed plans, in triplicate, were left out in error. These plans are part of that application and should be attached.

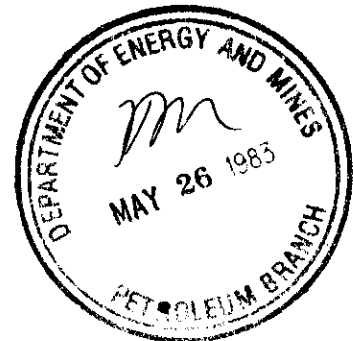
We apologize for this error and hope it has not caused you any inconvenience.

Yours very truly,

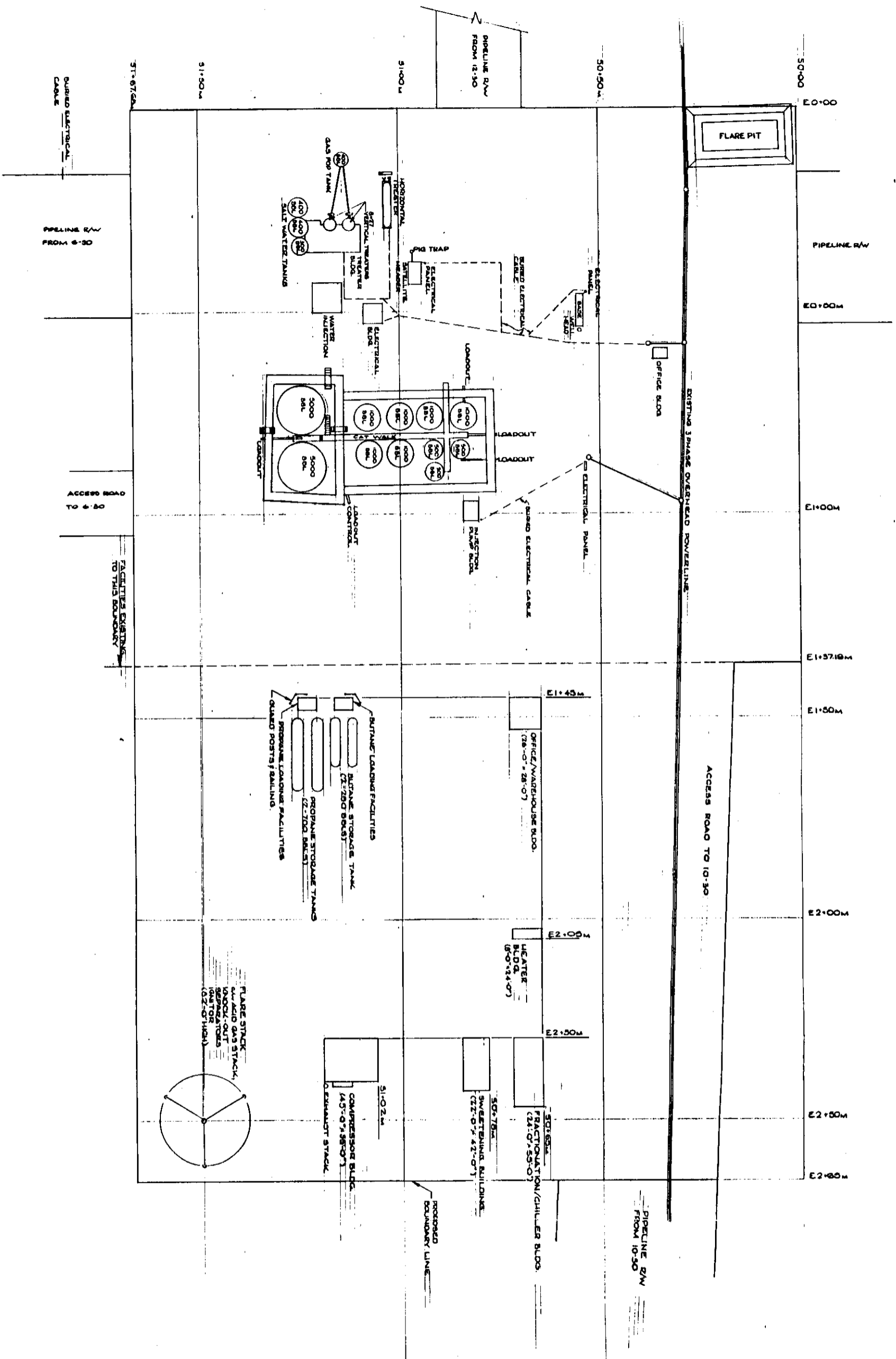
OMEGA HYDROCARBONS LTD.

for Shelly Pearce
George Patey
V.P. Production

GP/sp

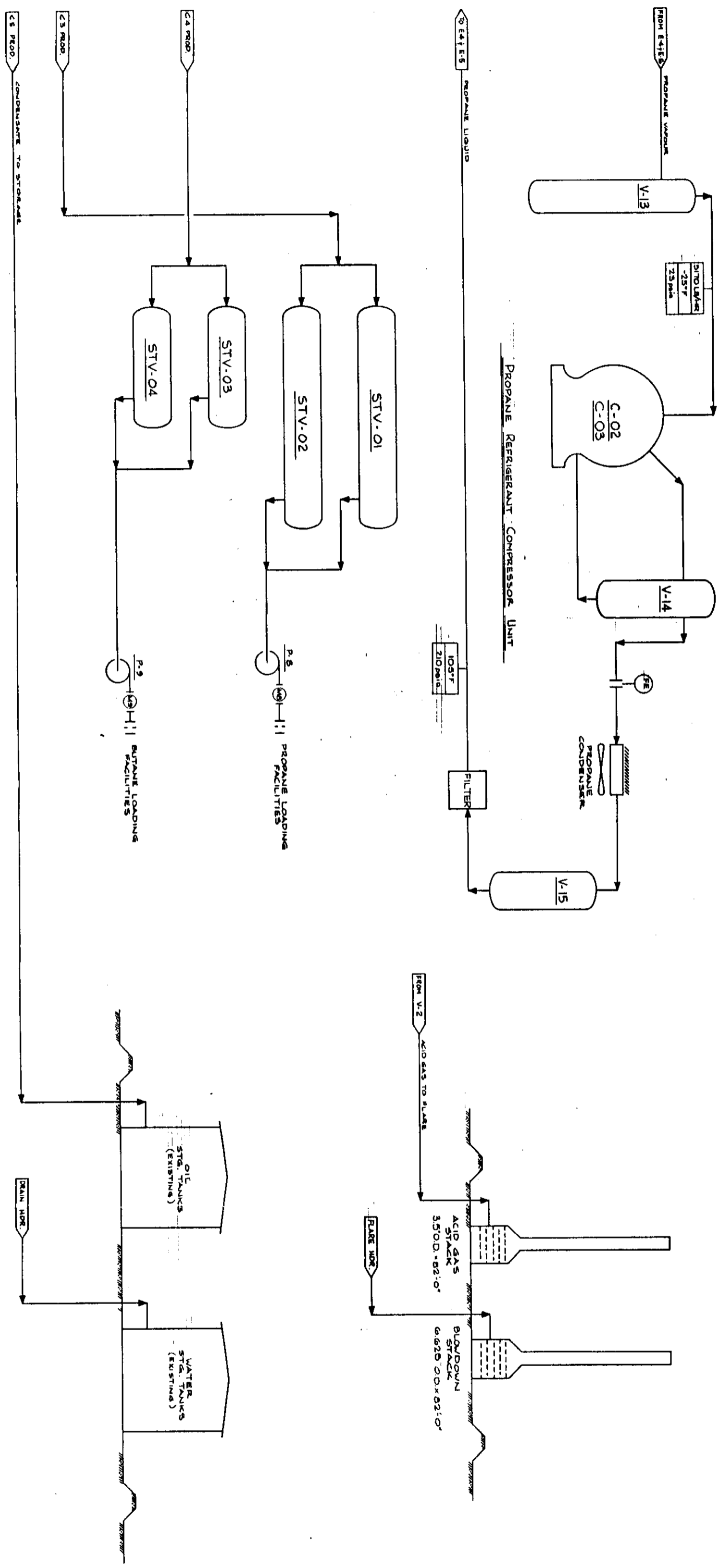


x.c. - H. Clare Moster (w/original attachments)
May 26, 1983 - ra

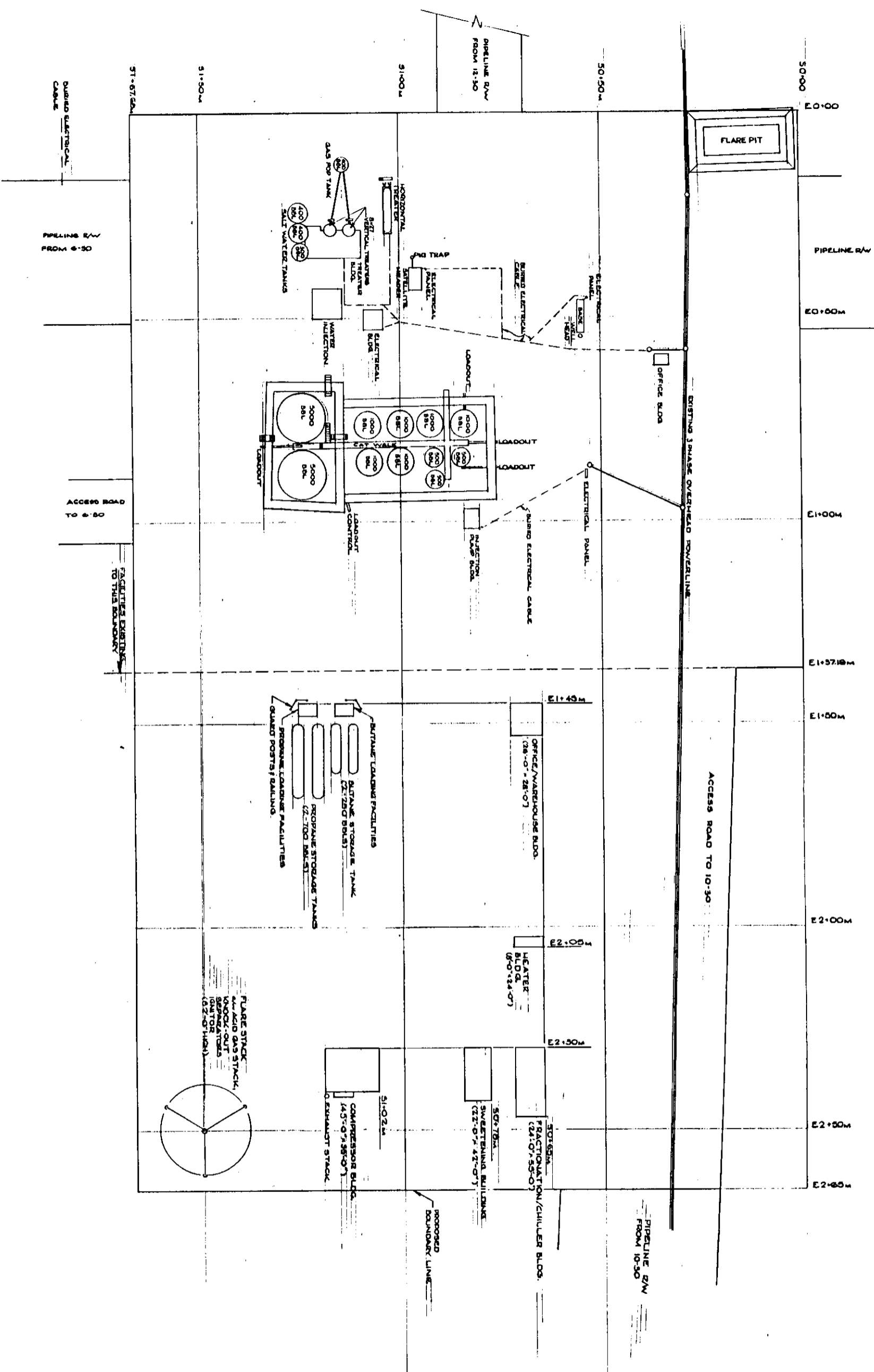


SWINARTON ENGINEERING LTD.			
OMEGA HYDROCARBONS LTD.			
WASKADA GAS PLANT			
SITE PLAN			
LSD 11 sec 30 TP 1 RGE 25 W.B.M.			
DATE	65-04-01	DATE	65-04-01
BY	CLN	BY	CLN
IN	A	IN	A
ISSUED FOR APPROVAL			
REVISION			
DRAWING NUMBER			
DRAWING NO.			

V-13
 PROPANE SUCTION SCRUBBER
 BUTANE STORAGE VESSEL
 250 BARREL CAPACITY
 C-02.03
 PROPANE COMPRESSORS
 BUTANE STORAGE VESSEL
 250 BARREL CAPACITY
 V-14
 OIL SEPARATOR
 PROPANE RECEIVER
 STV-01
 PROPANE STORAGE VESSEL
 700 BARREL CAPACITY
 STV-02
 PROPANE STORAGE VESSEL
 700 BARREL CAPACITY

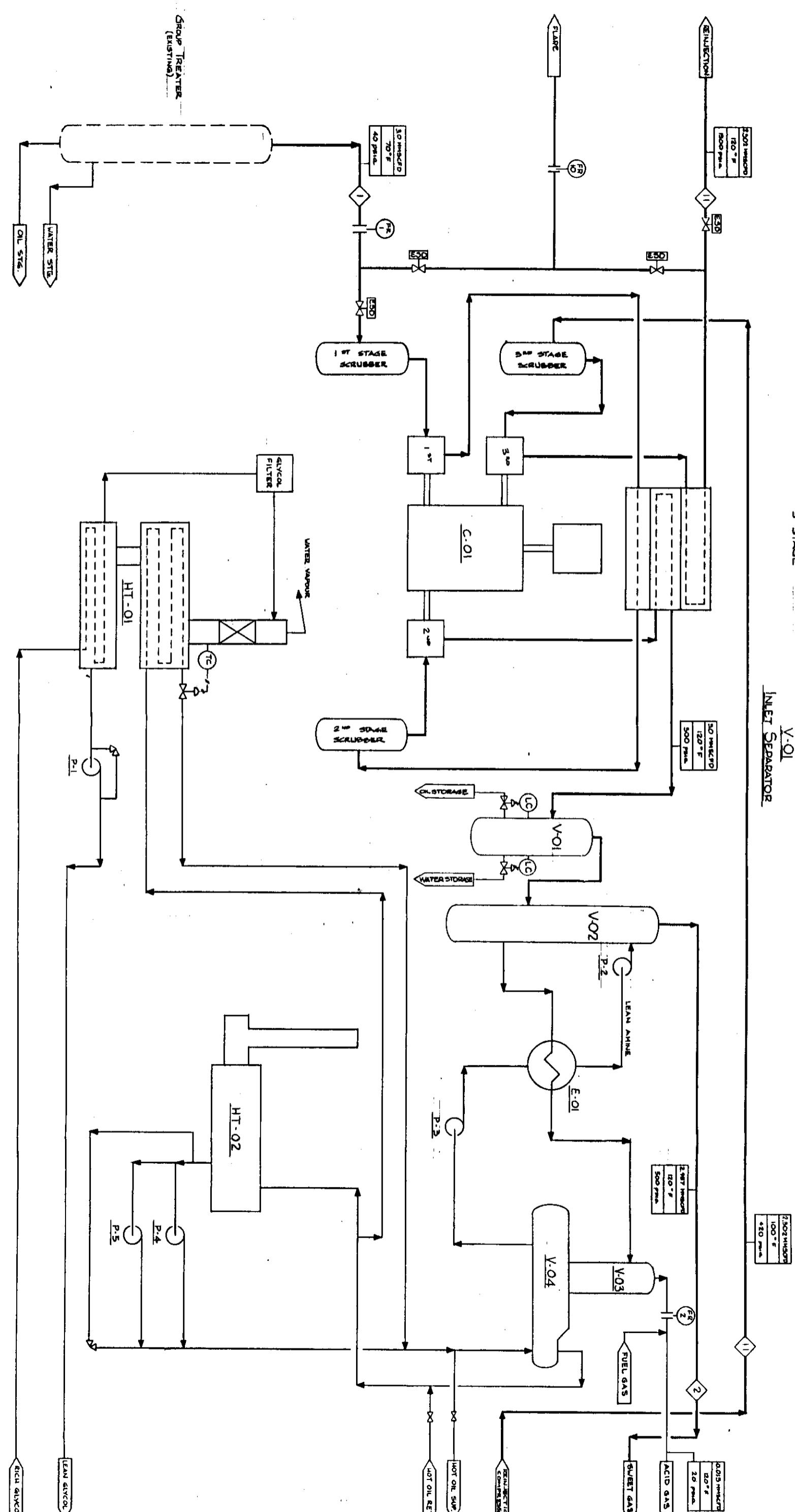


SWINARTON ENGINEERING LTD.									
CALGARY ALBERTA									
OMEGA HYDROCARBON LTD.									
WASKADA GAS PLANT									
PROCESS FLOW SCHEMATIC									
SHEET 3 OF 3									
DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
8-14-07	ALM	8-14-07	ALM	8-14-07	ALM	8-14-07	ALM	8-14-07	ALM
PROJECT D-8314-F-03									
SCALE									
DRAWN BY									
CHECKED BY									
APPROVED BY									
DATE									



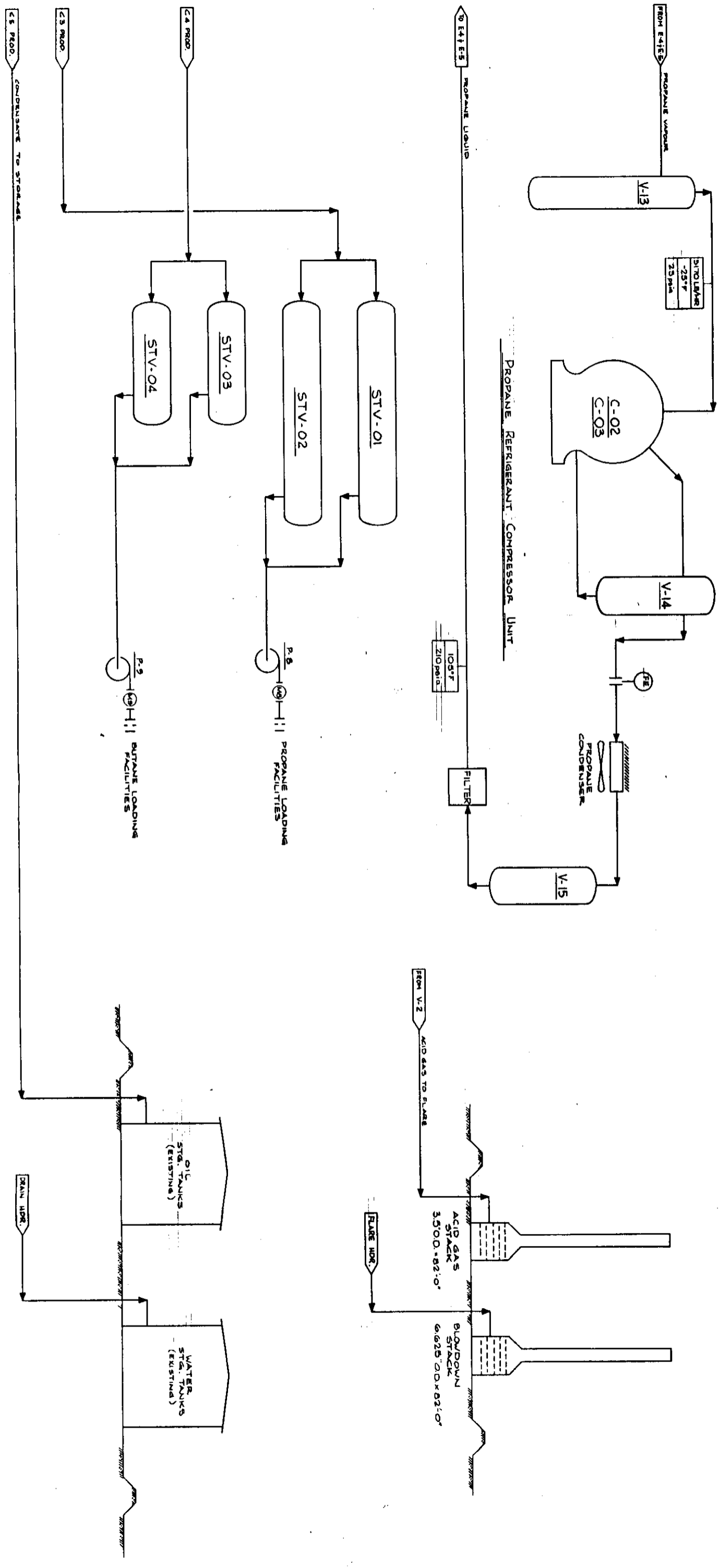
SWINARTON ENGINEERING LTD.									
CALCULATED BY					ASSEMBLED BY				
OMEGA HYDROCARBONS LTD.									
WASKADA GAS PLANT									
SITE PLAN									
L50 11 SEC 30 TP 1 RGE 25 W.P.M.									
DRAWING NO.	REV	DRAWING DATE	PROJECT NO.	SCALE	DATE	DATE	DATE	DATE	DATE
D-834-L-01	A	1983-03-30	0514	1:500	1983-03-30	1983-03-30	1983-03-30	1983-03-30	1983-03-30

HT-01
GLYCOL REGENERATION UNIT
C-01
COMPRESSOR PACKAGE
800 HORSEPOWER
3 STAGE
V-01
INLET SEPARATOR
V-02
AMINE EXCHANGER
V-03
AMINE STILL
V-04
AMINE REBOLLER
HT-02
HOT OIL HEATER

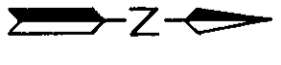
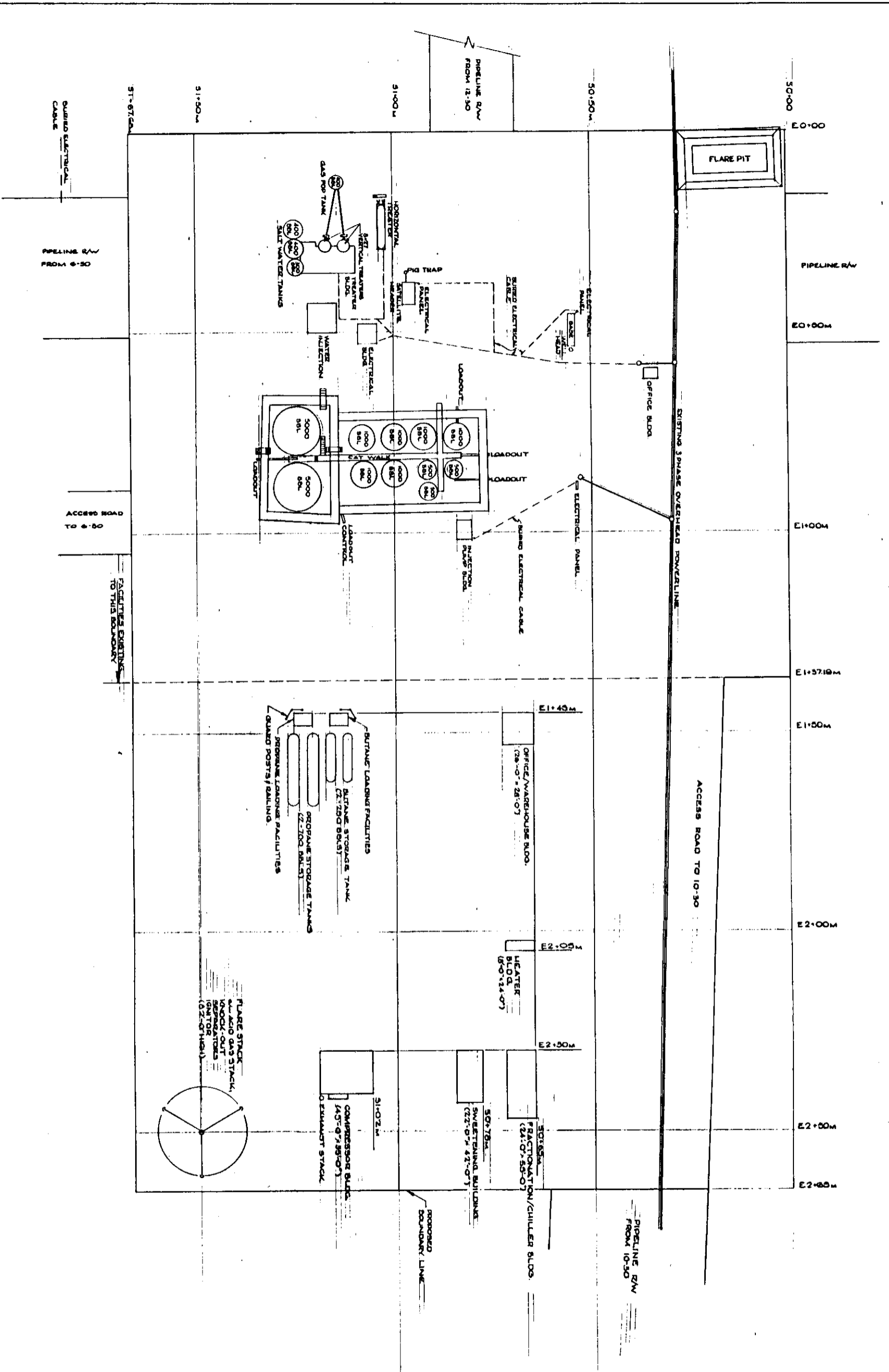


SWINARTON ENGINEERING LTD.				OMEGA HYDROCARBON LTD.			
CALGARY ALBERTA				WASKADA GAS PLANT			
PROCESS FLOW SCHEMATIC				SHEET 1 OF 3			
DESIGNED BY: J. MCNEIL				DATE: 03-04-07			
CHECKED BY: J. MCNEIL				DATE: 03-04-07			
APPROVED BY: J. MCNEIL				DATE: 03-04-07			
SCALE: 1" = 10'				SCALE: 1" = 10'			

V-13
 PROPANE Suction Scrubber
 STV-03
 BUTANE Storage Vessel
 250 BARREL CAPACITY
 C-02, C-03
 PROPANE COMPRESSORS
 STV-04
 BUTANE Storage Vessel
 250 BARREL CAPACITY
 V-14
 OIL SEPARATOR
 V-15
 PROPANE RECEIVER
 STV-01
 PROPANE Storage Vessel
 700 BARREL CAPACITY
 STV-02
 PROPANE Storage Vessel
 700 BARREL CAPACITY

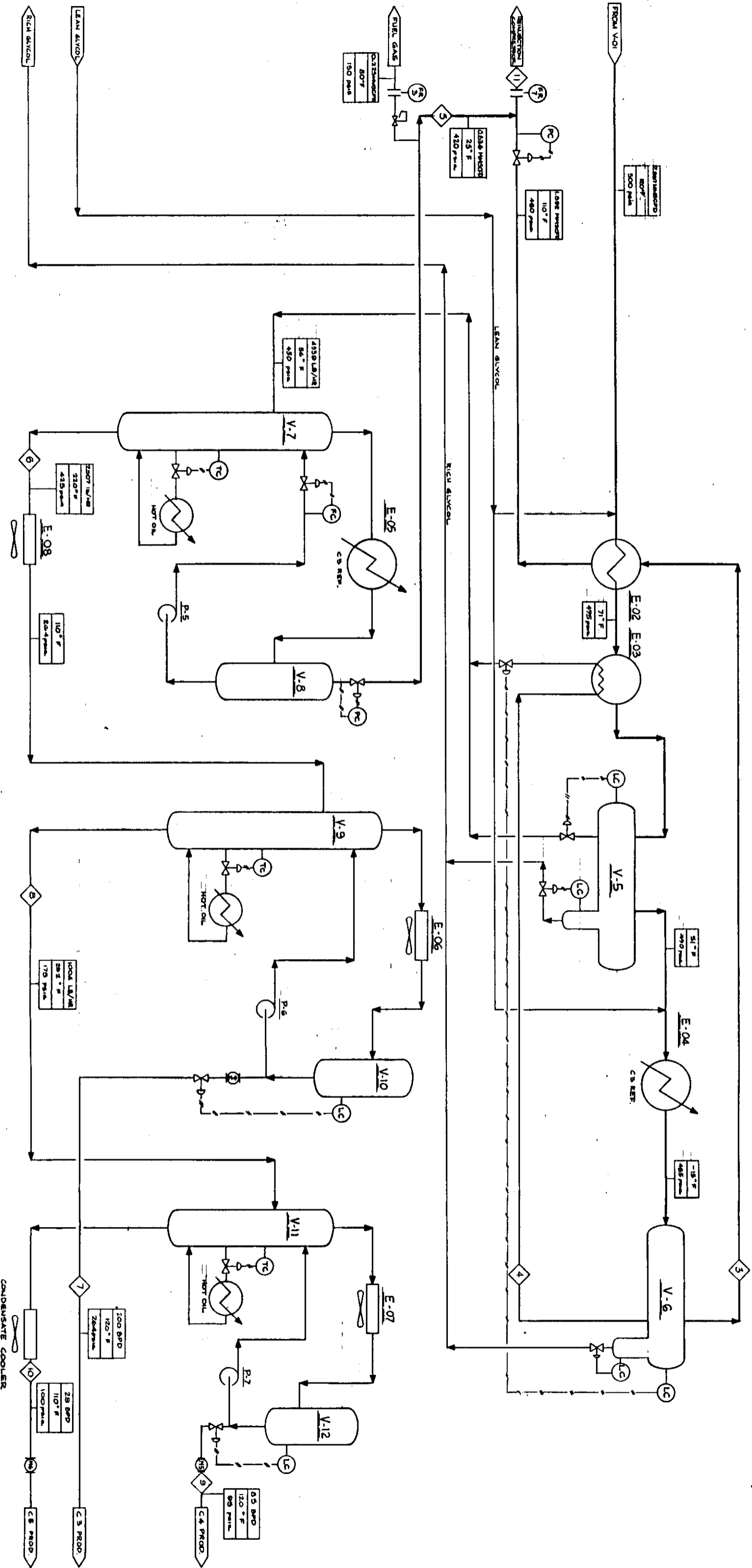


SWINARTON ENGINEERING LTD.									
OMEGA HYDROCARBON LTD.									
WASKADA GAS PLANT									
PROCESS FLOW SCHEMATIC									
SHEET 3 OF 3									
DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
05-04-07	DLH	05-04-07	DLH	05-04-07	DLH	05-04-07	DLH	05-04-07	DLH
PROJECT NO. D-8314-F-03									
REV. A									



SWINARTON ENGINEERING LTD.				OMEGA HYDROCARBONS LTD.			
WASKADA GAS PLANT				SITE PLAN			
L50 11 SEC 30 TP 1 RGE 25 WPM				DATE 1983-03-30			
SCALE 1:500				DRAWN BY D-834-L-01			
DATE 1983-03-30				CHECKED BY A			
DATE 1983-03-30				APPROVED BY A			
DATE 1983-03-30				REFERENCE DRAWINGS			
DATE 1983-03-30				BY			
DATE 1983-03-30				NO.			
DATE 1983-03-30				15342 FOR APPROVAL			
DATE 1983-03-30				REVISION			

V-12	V-5	V-6	V-7	V-8	V-9	V-10	V-11
DEBUTANIZER REFLUX DRUM	3 PHASE INTERMEDIATE SEPARATOR	LOW TEMP. SEPARATOR	DEETHANIZER TOWER	DEETHANIZER REFLUX DRUM	DEPROPANIZER TOWER	DEPROPANIZER REFLUX DRUM	DEBUTANIZER TOWER
E-02	E-03	E-04	E-05	E-06	E-07	E-08	
GAS / GAS EXCHANGER	GAS / LIQ. LIQUID EXCHANGER	GAS CHILLER	DEETHANIZER OH CONDENSER	DEPROPANIZER OH CONDENSER	DEBUTANIZER OH CONDENSER	DEETH BOTTOMS COOLER	



SWINARTON ENGINEERING LTD.		OMEGA HYDROCARBON LTD.	
CALGARY ALBERTA		CALGARY ALBERTA	
WASKADA GAS PLANT		WASKADA GAS PLANT	
PROCESS FLOW SCHEMATIC		PROCESS FLOW SCHEMATIC	
SHEET 2 OF 3		SHEET 2 OF 3	
DATE	BY	DATE	BY
1984-07-07	W. J. WILSON	1984-07-07	W. J. WILSON
DATE	BY	DATE	BY
1984-07-07	W. J. WILSON	1984-07-07	W. J. WILSON
DATE	BY	DATE	BY
1984-07-07	W. J. WILSON	1984-07-07	W. J. WILSON

PROPANE SUCTION SCRUBBER

PROPANE COMPRESSORS

OIL SEPARATOR

PROPANE RECEIVER

PROPANE STORAGE VESSEL

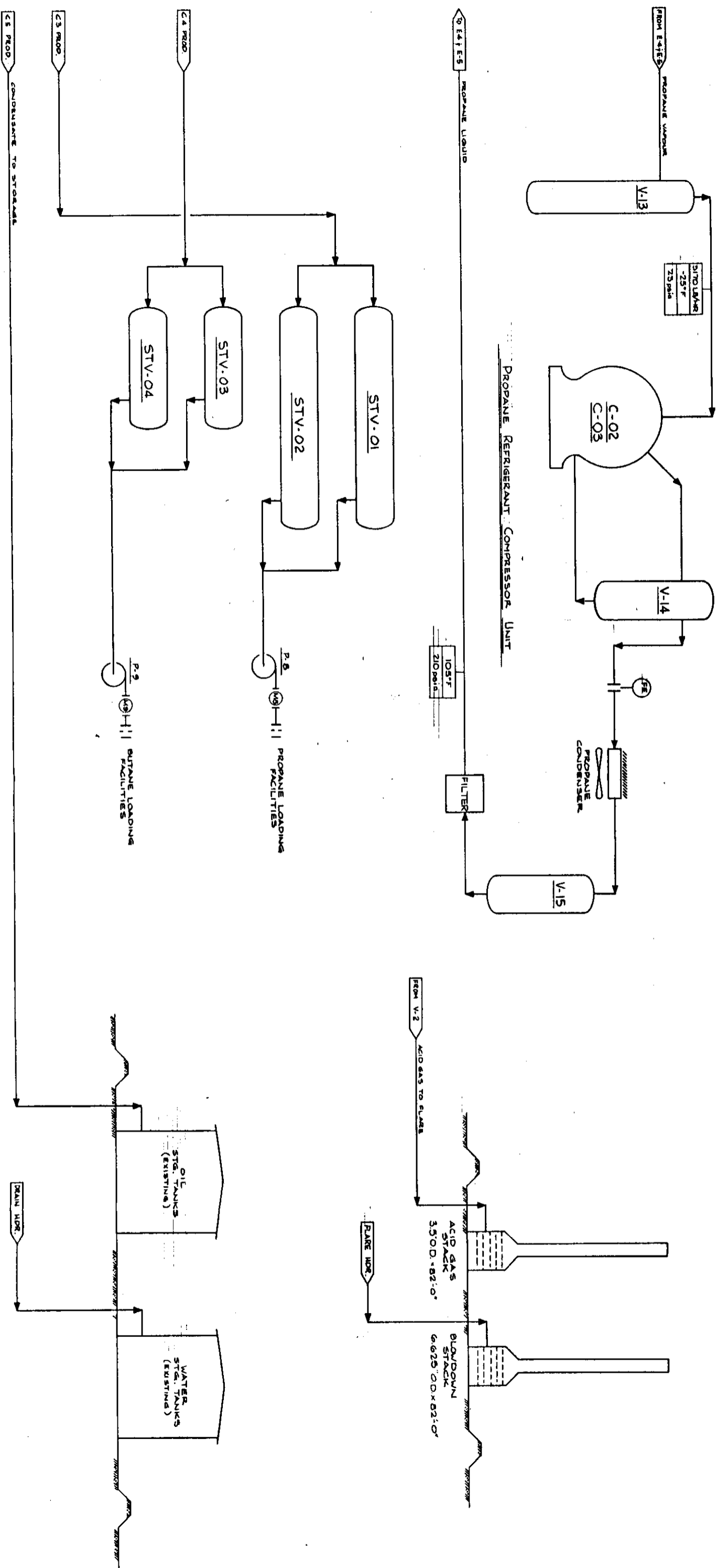
700 BARREL CAPACITY

BUTANE STORAGE VESSEL
250 BARREL CAPACITY

BUTANE STORAGE VESSEL
250 BARREL CAPACITY

PROANE STORAGE

700 BARREL CAPACITY



OMEGA HYDROCARBON LTD.									
WASKADA GAS PLANT									
PROCESS FLOW SCHEMATIC									
SHEET 3 OF 3									
DESIGNED BY	DATE	PROJECT	DRAWING NO.	REVISED FOR APPROVAL	BY	DATE	REVISION	DATE	REVISION
CHKD BY	DATE	SCALE	D-0314, P-03						
<div style="display: flex; justify-content: space-between;"> OMEGA HYDROCARBON LTD. WASKADA GAS PLANT PROCESS FLOW SCHEMATIC </div>									

CALGARY — ALBERTA

OMEGA HYDROCARBON LTD

PROCESS FLOW SCHEMATIC

PROCESS FLOW SCHEMATIC

SHEET 3 OF 3	
DATE	PROJECT
BY	DRAW'G NO.

BY	APPROVED BY	SCALE	D-8314-F-0
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Inter-Departmental Memo

To .
H. Clare Moster,
Director, Petroleum Branch,
Mineral Resources Division,
Department of Energy & Mines,
975 Century Street.

Date May 13, 1983.

From W. George Bowen,
Assistant Deputy Minister,
Environmental Management,
Department of Environment and
Workplace Safety & Health,
Bldg, 2, 139 Tuxedo Avenue.

Telephone

Subject OMEGA HYDROCARBONS - PROPOSED GAS PROCESSING PLANT - WASKADA FIELD.

I am in receipt of a memorandum from Dr. Ian Haugh with attached material which briefly describes the above project. I am also asked that I appoint a staff member to liaise directly with your Branch on this project. The staff person will be Larry Strachan, Chief, Environmental Control Programs, 895-5296.

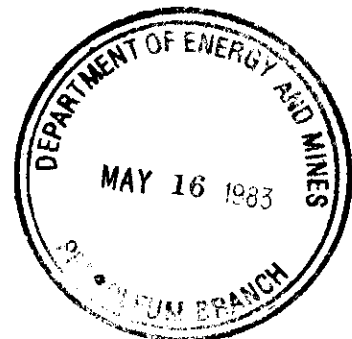
I expect that this project will be subjected to the Clean Environment Act process and ultimately require an Order of the Clean Environment Commission controlling emissions to the environment. However, we will require more detailed information on the actual process and potential emissions before our approach is finalized.

W. George Bowen

W. George Bowen.

Attachment.

cc: Dr. Ian Haugh
cc: L. Strachan



MANIT^{BA}

Inter-Departmental Memo

To

Dr. W. George Bowen,
Assistant Deputy Minister,
Environmental Management,
Bldg. 2, 139 Tuxedo Blvd.

Date April 26, 1983

From

Dr. Ian Haugh,
Deputy Chairman,
The Oil and Natural Gas
Conservation Board,
989 Century Street.

Telephone

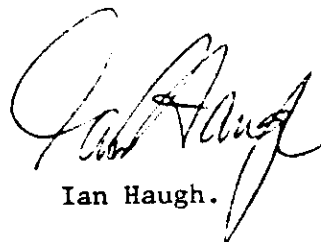
Subject

WASKADA FIELD - GAS PROCESSING PLANT

The Oil and Natural Gas Conservation Board has received the attached application from Omega Hydrocarbons Ltd., seeking approval to construct a gas processing plant in the Waskada Field. The plant is to be located in Lsd. 11 of Sec. 30-1-25 WPM, and will remove liquid petroleum gases from the associated gas produced with the crude oil in the immediate area. As there are presently no specific regulations under The Mines Act governing applications of this type, we propose to use the appropriate Alberta regulations (Part 9 and Section 15.050 of the Alberta "Oil and Gas Conservation Regulations") as guidelines. In this regard, Omega's application has been found deficient and a letter requesting more information (copy attached) has been forwarded to Omega.

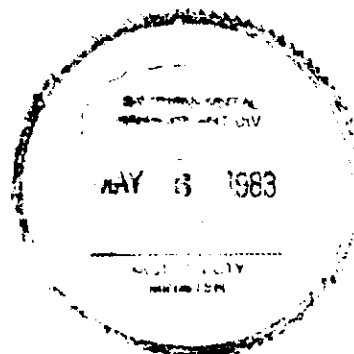
You will note that many of the points that have been indicated as deficient concern the environment. Consequently, we are advising you at an early stage in the processing of this application, and ask that you have a member of your staff establish contact and liaise directly with the Petroleum Branch of the Department of Energy and Mines.

Note that Omega has been requested to provide additional copies of the attachments to the application.



Ian Haugh.

Attach.





MANITOBA
DEPARTMENT OF ENERGY AND MINES
THE OIL AND NATURAL GAS CONSERVATION BOARD
309^{1/2} LEGISLATIVE BUILDING
WINNIPEG, MANITOBA
R3C 0V8

April 26, 1983

Omega Hydrocarbons Ltd.,
630 - 330 - 5th Avenue S.W.,
Calgary, Alberta.
T2P 0L4

Attention: Mr. G. A. Patey

Dear Sirs:

Re: Waskada Field - Gas Plant

Your application dated April 7, 1983 for approval to construct a gas plant in the Waskada area is hereby acknowledged.

As noted in your application, there are no specific regulations under The Mines Act governing this type of installation. The Board therefore proposes to adopt as a guide, the applicable sections (primarily Part 9 and Section 15.050) of the Alberta "Oil and Gas Conservation Regulations", and in this regard requests that you submit the information marked with an asterisk on the enclosed "Attachment No. 1". Those items that are considered particularly significant are highlighted with a yellow marker. While the Alberta regulation describes a two part application, for purposes of your application it will be appropriate to combine the requirements where possible.

The Board also requests your comments on the following matters:

- (a) Specific proposals for determining and distributing royalty income from the recovered products to the various mineral owners.
- (b) Corrosion mitigation features of the proposed plant.
- (c) Economics of the proposed plant.
- (d) Surface lease documentation for the plant site.
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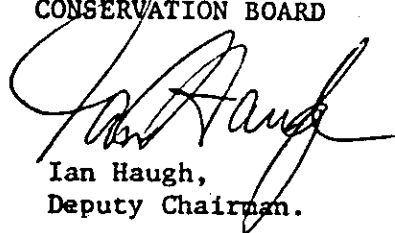
Additional information may be required by the Manitoba Department of Environment, which is being made aware of your application.

Omega Hydrocarbons Ltd.

The Board would also appreciate receiving three additional sets of the plant plot and the process flow diagram in order to facilitate processing of the application.

Yours sincerely,

THE OIL AND NATURAL GAS
CONSERVATION BOARD



Ian Haugh,
Deputy Chairman.

CC: Dr. W. G. Bowen,
Department of Environment.



April 7, 1983

Department of Energy & Mines
Oil & Gas Conservation Board
989 - Century Street
Winnipeg, Manitoba
R3H 0W4

ATTENTION: Dr. Ian Haugh

Dear Sir:

RE: Omega Hydrocarbons Ltd. request for
approval to Construct a Gas Plant
at Waskada, Manitoba for the
extraction of Natural Gas Liquids
and re-injection of the natural gas.

Omega Hydrocarbons Ltd. requests the Manitoba Government approval to construct a gas plant at Waskada. The plant will be designed to process up to 3,000 mcf/day of solution gas with the process consisting of a gas sweetener to remove the small amounts of hydrogen sulfide, the extraction of salable propane & butane along with the recovery of pentanes plus. The processed natural gas will be re-injected into the Spearfish formation as a means of pressure maintenance. The injected gas would remain in the reservoir as long as the gas injection scheme is beneficial and then would be produced back for sale.

In addition to recovering the natural gas liquids and conserving the natural gas, the injected gas acts as an excellent tertiary recovery scheme for the recovery of the Spearfish oil. This has been confirmed by a "Compositional Model Study Performance Prediction of a Gas Injection Scheme" of a selected number of our wells in Waskada. We are only requesting approval to build the gas plant & will be making a separate application for the actual injection of gas into the Spearfish zone.

We have reviewed the Manitoba regulations & were unable to locate any specific regulations for the construction of a Gas Plant. In view of this we have designed the Plant to meet normal good engineering practice as specified by the Alberta Oil & Gas Conservation Board.

x.c. - H. Clare Moster (with original attachments)
April 15, 1983 - IH/ra

The plant will also conform to all Environmental & Pollution regulations specified by the Manitoba Government.

In support of our application we have attached the following information for your review.

1. Plot Plan showing location of Omega's existing battery and location of proposed plant.
2. Three Process Flow Schematic Drawings showing all process equipment, operating conditions and products.
3. Additional information will be supplied as requested.

We are most anxious to obtain approval for construction of this plant as considerable lead time is required with the supplier indicating 18-20 weeks for delivery and another 6-8 weeks for installation & start-up.

Yours truly,



G. E. Patey
V. P. Production

GP/cw

PART 9

PROCESSING PLANTS

9.010 In this Part, except where the context otherwise requires, "sulphur" means all sulphur in whatever compound or physical form it may exist. (AR 151/71; AR 71/74)

9.020 (1) An application under section 38, subsection (1), clause (b) of the Act; section 4, subsection (1), clause (a) or section 4.1, subsection (1), of The Clean Air Act; or section 4, Subsection (1), clause (e) or section 4.1, clause (1) of The Clean Water Act, for approval of a new scheme or a major modification to an existing scheme for the processing of gas shall be filed with the Board and shall conform with the requirements of section 15.050.

(2) An application referred to in subsection (1) may be made in two parts, the first part concerning the location, conservation levels and pollution control features of the proposed scheme and being for approval to construct the proposed scheme, the second part concerning the other details of the scheme and being for approval to operate the proposed scheme.

(3) Upon the filing of a completed application, or where an application is to be made in two parts, upon the filing of a completed first part of an application for approval, or a major amendment of approval, of a scheme for the processing of gas and where it appears to the Board that its decision on the application

(a) may directly and adversely affect the rights of any person, the Board shall hold a public hearing or publish notice of the application, or

(b) would not directly and adversely affect the rights of any person, the Board may grant the application without notice or hearing.

(4) Where an application has been made in two parts, and where the Board, the Director of Standards and Approvals of the Department of the Environment and the Minister of the Environment have approved the location, conservation levels and pollution control features of the proposed scheme, the Board may consider the second part of the application without hearing or further notice of the application. (AR 151/71; AR 71/74)

9.030 (1) No person shall commence construction related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the location, conservation levels and pollution control

features of the scheme, and the Director of Standards and Approvals of the Department of the Environment has issued a permit to construct the necessary facilities pursuant to The Clean Air Act and The Clean Water Act.

(2) No person shall commence processing operations related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the scheme and the Director of the Division of Standards and Approvals of the Department of the Environment has issued a licence to operate the scheme pursuant to The Clean Air Act and The Clean Water Act. (AR 151/71; AR 71/74)

9.040 The operator of a processing plant shall conduct operations in such a manner as to maintain the average maximum concentration of any air contaminant in the ambient air within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act or any other standards the Board or the Department of the Environment may specify. (AR 151/71; AR 71/74)

9.050 (1) Subject to subsection (2), the operator of a processing plant treating gas for removal of hydrogen sulphide shall, by continuous or periodic measurements or tests, obtain records satisfactory to the Board, and the Department of the Environment of:

- (a) where sulphur compounds are emitted to the atmosphere through a stack following incineration, the daily quantity of sulphur dioxide and any other sulphur present in the stack gases and the daily minimum stack gas emission temperature, or
- (b) where sulphur compounds are emitted to the atmosphere through a flare stack without prior incineration, the daily average volume of stack gases and the daily average concentration of hydrogen sulphide and of any other sulphur present in the stack gases.

(2) The operator of a processing plant which emits sulphur compounds to the atmosphere after incineration and is recovering more than 100 tonnes per day of sulphur or emitting to the atmosphere gases containing more than 10 tonnes per day of sulphur, shall obtain the operating data referred to in subsection (1), clause (a) on a continuous basis.

(3) If the total quantity of sulphur being emitted as determined under subsection (1) exceeds the quantity approved by the Board or the Department of the Environment, the operator of the plant shall take immediate measures to reduce the total emission of sulphur to within the approved limits.

(4) If the total quantity of sulphur emitted to the atmosphere in any day exceeds the quantity approved by the Board or the Department of the Environment by more than 50 per cent, the operator shall immediately report such emission to the Board by the quickest effective means.

(5) The operator of a processing plant shall not discharge or permit to be discharged from the plant to the atmosphere any gas containing hydrogen sulphide unless it is burned so that essentially all of the sulphur is converted to sulphur dioxide, but the Board on written application may approve another method of disposal.

(6) The operator of a processing plant shall conduct operations in such a manner as to

- (a) control the emission of sulphur dust to the satisfaction of the Board and the Department of the Environment,
- (b) control the emission of unburned hydrocarbon vapours to the satisfaction of the Board and the Department of the Environment,
- (c) control the emission of odourous materials to the satisfaction of the Board and the Department of the Environment,
- (d) control the emission of smoke to the satisfaction of the Board and the Department of the Environment, and
- (e) control noise to the satisfaction of the Board and the Department of the Environment.

(7) The disposal from a processing plant of water produced in association with gas or oil, shall be in accordance with section 8.040.

(8) The disposal of process waste water, sanitary waste or surface run-off water from a processing plant shall,

- (a) if to an underground formation, be in accordance with a scheme approved by the Board pursuant to section 38 of the Act and in accordance with a licence of the Department of the Environment, or
- (b) if to a body of surface water or a disposal pond, be in accordance with a licence of the Department of the Environment. (AR 151/71; AR 241/71; AR 71/74; AR 229/79)

9.060 The operator of a processing plant in which gas containing more than 10 moles per kilomole hydrogen sulphide, or such higher or lower ratio as the Board may by order stipulate, is being processed, shall, prior to the initial processing of gas, file with the Board and the Department of the Environment an outline of emergency procedures to ensure public safety, that will be followed in the event of an uncontrolled release of contaminants to the air, water or land from the processing plant. (AR 151/71; AR 71/74; AR 229/79)

9.070 (1) Where it appears to the Board that the operations of a scheme for the processing of gas has contravened or is contravening the Act, these regulations or an order of the Board, the Board may

(a) order that operations of the scheme be partially or totally suspended, or

(b) require that remedial measures be taken.

(2) When any operation of a scheme for the processing of gas is suspended, pursuant to subsection (1), the Board shall, within ten days of the suspension, hold an inquiry to investigate the circumstances leading to the suspension.

(3) After an inquiry pursuant to subsection (2), the Board may order that the suspension of any operation continue or that the processing scheme be shut down until such time as the Board otherwise orders. (AR 151/71; AR 71/74)

(Continued on page R-63)

Gas Processing and Underground Storage

5.050 (1) An application under section 9.020 for approval of a new scheme or an amendment to an existing scheme for the processing of gas shall include, when applicable, the information set out in subsections (3) and (4).

(2) The application shall be structured in distinctly separate sections which contain information respecting,

- (a) general matters,
- (b) the plant location,
- * (c) conservation levels,
- * (d) air pollution, and
- * (e) water pollution.

(3) Where an application is made in two parts, as provided for in section 9.020, the first part of the application shall include, when applicable,

- * (a) a map or maps covering the area within a 16 kilometre radius of the plant showing
 - (i) the plant location,
 - (ii) the topography of the area,
 - (iii) the location of all lakes, streams and other surface bodies of water in the area,
 - (iv) the location, where practical, of all occupied buildings within an 8 kilometre radius of the plant,
 - (v) the location of other gas processing or industrial plants in the area, and
 - (vi) the general land use of the area,
- * (b) a general discussion of the overall process scheme proposed,
- * (c) tabulations of
 - (i) the analysis of the raw gas from each pool from which the gas would be gathered and a composite analysis of the feed gas to the processing

plant under normal operating conditions and anticipated conditions of maximum hydrogen sulphide content,

- * (ii) an overall plant material balance based on normal operating conditions and anticipated conditions of maximum hydrogen sulphide inlet rate,
- (iii) the maximum acid gas rate to the sulphur plant and the hydrogen sulphide content of the acid gas, under the maximum conditions referred to in subclause (i), and
- * (iv) a forecast of the raw gas to be processed and the plant products to be recovered by years over the life of the scheme,
- * (d) a discussion of the reasons for the choice of the plant location having regard to the control of pollution,
- * (e) evidence of any communications with the residents in the vicinity of the proposed plant to advise them of the company's plans in the area and the possible impact these plan could have on the local residents, where such communications have taken place,
- * (f) technical evidence and cost data in support of the proposed recovery level of sulphur and hydrocarbons including an economic evaluation of the feasibility of conserving any sulphur or hydrocarbons that would not be recovered,
- * (g) stack design data including
 - (i) key dimensions,
 - (ii) the location of the incinerator and flare stacks within the plant area,
 - (iii) the elevation above sea level of the base of the incinerator and flare stacks,
 - (iv) minimum incinerator stack gas exit temperature,
 - (v) stack gas composition for the normal and maximum sulphur emission case,

- (vi) normal and maximum half-hour average incinerator stack gas sulphur dioxide concentration, and
- (vii) normal and maximum half-hour average sulphur emission rate,
- * (h) evidence, including allocations of dilution gas where applicable, that the main and emergency stacks have been designed to maintain the average maximum concentration of sulphur dioxide within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act or any other standards the Board or the Department of the Environment may specify for both normal operating conditions and conditions of maximum sulphur emissions,
- * (i) a general discussion of the method proposed for control of hydrocarbon vapour emissions including emissions from product storage tanks,
- N/A (j) a general discussion of the method proposed for control of sulphur dust,
- * (k) a general discussion of the method proposed for control of smoke,
- * (l) a general discussion of the method proposed for control of odours,
- * (m) a general discussion of the method by which and the manner in which the release of any other contaminant to the atmosphere during normal or abnormal plant operations would be controlled,
- * (n) a general discussion of the method proposed for control of noise,
- * (o) a general discussion of the monitoring program for hydrogen sulphide, sulphur dioxide and sulphur dust in the surrounding area,
- * (p) a general discussion of the manner in which water produced in association with gas and oil would be treated and disposed of,
- * (q) a general discussion of the manner in which any process waste water would be contained, treated and disposed of,
- * (r) a general discussion of the manner in which surface water drainage within the plant process and storage areas would be contained, treated and disposed of,

- * (s) a general discussion of the manner in which sanitary sewage would be treated and disposed of,
- * (t) a general discussion of the manner in which the disposal of solid waste material would be conducted to minimize contamination of surface and ground waters,
- * (u) a general discussion of the method by which and the manner in which any other contaminant would be released to the surface water or disposed of to an underground formation,
- * (v) a general discussion of the proposed method of and frequency of monitoring of waste water volume flow rates and contaminant concentrations,
- (w) a general discussion of the feasibility of using a single large gas processing plant in the area of the application, rather than two or more smaller plants or the feasibility of expanding a nearby existing gas processing plant to handle the additional gas which is to be processed in the proposed plant.
- N/A
- (x) such further information as the Board may require.

(4) Where an application is made in two parts, as provided for in section 9.020, the second part of the application shall include, when applicable,

- (a) detailed information as to any changes in the information supplied under subsection (3) with, where appropriate, new plans, diagrams and statements,
- * (b) maps showing
 - (i) the lessors and lessees of petroleum and natural gas rights within and adjoining the scheme area,
 - (ii) the status of each well within and adjoining the scheme area for each zone in which it is completed, and
 - (iii) the gathering facilities including line size, and operating pressures,
- * (c) a detailed description of the overall process scheme,
- (d) figures showing
 - (i) a process flow diagram of the proposed facilities,

- ★ (ii) the facilities for measurement of all streams entering and leaving the processing plant or directly affecting the measurement of such streams,
- ★ (e) a discussion of product specifications and composition and the facilities to be provided for product storage,
- ★ (f) a discussion of the provisions made for marketing or conservation of all plant products,
- (g) a scale plan of the plant site showing
 - (i) the location of processing, storage and other facilities,
 - ★ (ii) sewer lines,
 - ★ (iii) the points of discharge of any contaminant from the plant,
 - ★ (iv) the location of all air contaminant control equipment,
 - ★ (v) the location of all waste water treatment facilities, and
 - ★ (vi) the location of all surface drainage water control and treatment facilities,
- ★ (h) a plan of the incinerator stack showing
 - (i) the size, location and height of sampling ports,
 - (ii) the access ladder and sampling platform, and
 - (iii) the locations of the exit temperature measuring device and electric power outlets,
- ★ (i) a detailed description of the method proposed for control of hydrocarbon vapour emissions including emissions from product storage tanks,
- N/A (j) a detailed description of the method proposed for control of sulphur dust,
- ★ (k) a detailed description of the method proposed for control of smoke,

- * (l) a detailed description of the method proposed for the control of odours,
- * (m) a detailed description of the method by which and the manner in which the release of any other contaminant to the atmosphere during abnormal or normal plant operations would be controlled,
- * (n) a detailed description of the method proposed for the control of noise,
- * (o) a detailed description, including maps showing air quality monitoring installations, of the monitoring program for hydrogen sulphide, sulphur dioxide and sulphur dust in the surrounding area,
- * (p) design details, supported by drawings where necessary, of the facilities to be provided for the containment, treatment and disposal of water produced in association with oil and gas, process waste water, surface drainage water and sanitary sewage including, where applicable,
 - (i) for detention lagoons and settling ponds, retention time based on design flow rates, removal efficiency with respect to suspended solids, sulphides, chemical oxygen demand and ammonia nitrogen, and percolation data respecting the permeability of the soil to indicate expected seepage,
N/A
 - (ii) for evaporation ponds, in addition to the information required by subclause (i),
N/A local evaporation and precipitation data,
 - * (iii) for oil separators, retention time, design maximum flow rates, and oil removal efficiency, and
 - * (iv) for sour water strippers, design flow rate, operating temperature and pressure, and hydrogen sulphide removal efficiency,
- * (q) a discussion of the type and the amount of chemicals and processing materials to be used,
- * (r) a statement of the calculated concentration and emission rate of every contaminant that would be discharged from the plant,

- ★ (s) a discussion of the plant start up procedures to be followed having regard to the control of pollution,
- ★ (t) an outline of emergency procedures to ensure public safety, that will be followed in the event of an uncontrolled release of contaminants to the air, water or land, as required by section 9.060, and
- (u) such further information as the Board may require.

(5) Where an application as defined in subsection (1) is made for a major modification to an existing scheme the application shall include

- (a) a discussion of the exact nature of the modification,
- (b) a discussion of the effect of the modification on the existing plant, and
- (c) the information required by subsections (3) and (4) where any changes from information previously filed would take place or where the information has not been previously submitted to the Board.
(AR 151/71; AR 69/72; AR 71/74; AR 229/79)

15.060 An application under section 38, clause (b) of the Act for approval of a new scheme or a major modification to an existing scheme, for the underground storage of gas shall include, when applicable

- (a) maps showing
 - (i) the area included in the scheme,
 - (ii) the lessors and lessees within and adjoining the scheme area, and
 - (iii) the status of each well within and adjoining the area for each zone in which it is completed, and the gas gathering facilities including line size and operations pressures,

- (b) a figure showing the facilities for the measurement of all relevant streams within the scheme area,
- (c) a tabulation of the analyses of raw gas from each pool from which gas will be gathered or injected,
- (d) evidence, including reservoir calculations, illustrating that the storage of gas is consistent with sound conservation practices,
- (e) a discussion of the method proposed for the control of pollution which might result from the gathering or injection of gas containing hydrogen sulphide, and
- (f) a discussion of the future disposition of the stored gas.

Water Disposal

15.070 An application under section 38, clause (c) of the Act for approval of a scheme for the gathering, storage and disposal of water produced in conjunction with oil or gas shall include, when applicable,

- (a) maps showing
 - (i) the location of the disposal well
 - (ii) the lessors and lessees within 3 kilometres of the proposed disposal well,
 - (iii) status of each well adjacent to the disposal well, and
 - (iv) the structure or isopachs of the pool into which fluids will be disposed,
- (b) figures showing
 - (i) geological cross-sections including the top and base of the formation, water-oil, gas-oil and gas-water interfaces,
 - (ii) completion details of the proposed disposal well including
 - (A) the depth of the packer,
 - (B) existing completion interval and the proposed disposal interval, and

COPY

April 26, 1983

Dr. W. George Bowen,
Assistant Deputy Minister,
Environmental Management,
Bldg. 2, 139 Tuxedo Blvd.

Dr. Ian Haugh,
Deputy Chairman,
The Oil and Natural Gas
Conservation Board,
989 Century Street.

WASKADA FIELD - GAS PROCESSING PLANT

The Oil and Natural Gas Conservation Board has received the attached application from Omega Hydrocarbons Ltd., seeking approval to construct a gas processing plant in the Waskada Field. The plant is to be located in Lsd. 11 of Sec. 30-1-25 WPM, and will remove liquid petroleum gases from the associated gas produced with the crude oil in the immediate area. As there are presently no specific regulations under The Mines Act governing applications of this type, we propose to use the appropriate Alberta regulations (Part 9 and Section 15.050 of the Alberta "Oil and Gas Conservation Regulations") as guidelines. In this regard, Omega's application has been found deficient and a letter requesting more information (copy attached) has been forwarded to Omega.

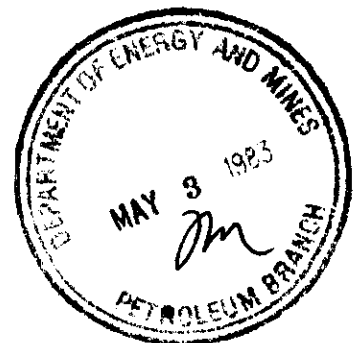
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Note that Omega has been requested to provide additional copies of the attachments to the application.

ORIGINAL SIGNED BY
IAN HAUGH

Ian Haugh.

HCM/IH/ra
Attach.
bc: Petroleum Branch





MANITOBA
DEPARTMENT OF ENERGY AND MINES
THE OIL AND NATURAL GAS CONSERVATION BOARD
309 4th FLOOR LEGISLATIVE BUILDING
WINNIPEG, MANITOBA
R3C 0V8



April 26, 1983

Omega Hydrocarbons Ltd.,
630 - 330 - 5th Avenue S.W.,
Calgary, Alberta.
T2P 0L4

Attention: Mr. G. A. Patey

Dear Sirs:

Re: Waskada Field - Gas Plant

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The Board also requests your comments on the following matters:

- (a) Specific proposals for determining and distributing royalty income from the recovered products to the various mineral owners.
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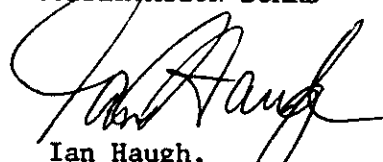
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Omega Hydrocarbons Ltd.

The Board would also appreciate receiving three additional sets of the plant plot and the process flow diagram in order to facilitate processing of the application.

Yours sincerely,

THE OIL AND NATURAL GAS
CONSERVATION BOARD



Ian Haugh,
Deputy Chairman.

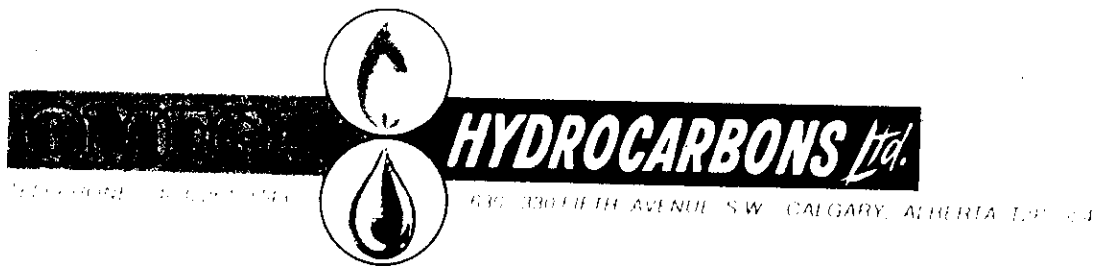
CC: Dr. W. G. Bowen,
Department of Environment.

HCM/IH/ra

bc: Marc Ellesen
J. F. Redgwell

*Clare - your file
copy*

*(JFK was advised
today to forward
letter)*



April 7, 1983

Department of Energy & Mines
Oil & Gas Conservation Board
989 - Century Street
Winnipeg, Manitoba
R3H 0W4

ATTENTION: Dr. Ian Haugh

Dear Sir:

RE: Omega Hydrocarbons Ltd. request for
approval to Construct a Gas Plant
at Waskada, Manitoba for the
extraction of Natural Gas Liquids
and re-injection of the natural gas.

Omega Hydrocarbons Ltd. requests the Manitoba Government approval to construct a gas plant at Waskada. The plant will be designed to process up to 3,000 mcf/day of solution gas with the process consisting of a gas sweetener to remove the small amounts of hydrogen sulfide, the extraction of salable propane & butane along with the recovery of pentanes plus. The processed natural gas will be re-injected into the Spearfish formation as a means of pressure maintenance. The injected gas would remain in the reservoir as long as the gas injection scheme is beneficial and then would be produced back for sale.

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We have reviewed the Manitoba regulations & were unable to locate any specific regulations for the construction of a Gas Plant. In view of this we have designed the Plant to meet normal good engineering practice as specified by the Alberta Oil & Gas Conservation Board.

x.c. - H. Clare Moster (with original attachments)
April 15, 1983 - IH/ra

The plant will also conform to all Environmental & Pollution regulations specified by the Manitoba Government.

In support of our application we have attached the following information for your review.

1. Plot Plan showing location of Omega's existing battery and location of proposed plant.
2. Three Process Flow Schematic Drawings showing all process equipment, operating conditions and products.
3. Additional information will be supplied as requested.

We are most anxious to obtain approval for construction of this plant as considerable lead time is required with the supplier indicating 18-20 weeks for delivery and another 6-8 weeks for installation & start-up.

Yours truly,



G. E. Patey

V. P. Production

GP/cw

GAS STREAM :

Purpose

Unit

Gas Characteristics

	BATTERY TREATER	wet, sour, 3.0 MM ^{SCFD} , 70°F, 40 psia
moisture out	1st Stage Scrubber	"
pressure up	1st Stage Compressor	sour, 3.0, ?, ?
moisture out	2nd Stage Scrubber	"
pressure up	2nd Stage Compressor	sour, 3.0 MM, 120°F, 500 psia
H ₂ S removal	Amine Contactor	sweet, 2.983 MM, 120°F, 500 psia
moisture out	Sweet Gas Scrubber	
glycol injection	GAS/GAS EXCHANGER *	71°F, 495 psia
cool gas	GAS/LTS LIQUIDS EXCHANGER	
remove LPG's C ₃ ⁺	3 PHASE INTERMEDIATE SEPARATOR	dry 51°F, 490 psia
glycol removal	GAS CHILLER	-15°F, 485 psia
remove LPG's C ₃ ⁺	LOW TEMP SEPARATOR	dry
warm gas	GAS/GAS EXCHANGER *	2.012 MM, 110°F, 490 psia
moisture out	3rd Stage Scrubber	
pressure up	3rd Stage Compressor	2.536 MM, 120°F, 1500 psia
	Injection well(s)	

use of Morris Checkmate

C3⁺ STREAM :

FROM 3 PHASE INTERMEDIATE SEPARATOR
AND
LOW TEMPERATURE SEPARATOR

@ 4,116 ^{lb}/hr, 56°F, 430 psia

C₂ (ethane)
removed and
put back into dry
gas inj stream

DE-ETHANIZER TOWER
(and De-Ethanizer Reflux Drum)

COOLER

2,677 ^{lb}/hr, 110°F, 220 psia

C₃ (propane)
removed from
stream as a
vapour

DE-PROPANIZER TOWER
(and De-Propanizer Reflux Drum)

1,029 ^{lb}/hr, 130°F, 71 psia

C₄ (butane)
removed from
C₅⁺ (pentanes plus)

DE-BUTANIZER TOWER
(and De-Butanizer Reflux Drum)

PART 9

PROCESSING PLANTS

9.010 In this Part, except where the context otherwise requires, "sulphur" means all sulphur in whatever compound or physical form it may exist. (AR 151/71; AR 71/74)

9.020 (1) An application under section 38, subsection (1), clause (b) of the Act; section 4, subsection (1), clause (a) or section 4.1, subsection (1), of The Clean Air Act; or section 4, Subsection (1), clause (e) or section 4.1, clause (1) of The Clean Water Act, for approval of a new scheme or a major modification to an existing scheme for the processing of gas shall be filed with the Board and shall conform with the requirements of section 15.050.

appln in 2 parts

(2) An application referred to in subsection (1) may be made in two parts, the first part concerning the location, conservation levels and pollution control features of the proposed scheme and being for approval to construct the proposed scheme, the second part concerning the other details of the scheme and being for approval to operate the proposed scheme.

(3) Upon the filing of a completed application, or where an application is to be made in two parts, upon the filing of a completed first part of an application for approval, or a major amendment of approval, of a scheme for the processing of gas and where it appears to the Board that its decision on the application

Hearing?

(a) **may directly and adversely affect the rights of any person, the Board shall hold a public hearing or publish notice of the application, or**

(b) **would not directly and adversely affect the rights of any person, the Board may grant the application without notice or hearing.**

(4) Where an application has been made in two parts, and where the Board, the Director of Standards and Approvals of the Department of the Environment and the Minister of the Environment have approved the location, conservation levels and pollution control features of the proposed scheme, the Board may consider the second part of the application without hearing or further notice of the application. (AR 151/71; AR 71/74)

No Const until

9.030 (1) **No person shall commence construction related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the location, conservation levels and pollution control**

*Location
Conservation levels
Pollution control features*

features of the scheme, and the Director of Standards and Approvals of the Department of the Environment has issued a **Permit to construct** the necessary facilities pursuant to The Clean Air Act and The Clean Water Act.

(2) No person shall commence processing operations related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the scheme and the Director of the Division of Standards and Approvals of the Department of the Environment has issued a **licence to operate** the scheme pursuant to The Clean Air Act and The Clean Water Act. (AR 151/71; AR 71/74)

9.040 The operator of a processing plant shall conduct operations in such a manner as to **maintain the average maximum concentration of any air contaminant in the ambient air within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act** or any other standards the Board or the Department of the Environment may specify. (AR 151/71; AR 71/74)

9.050 (1) Subject to subsection (2), the operator of a processing **plant treating gas for removal of hydrogen sulphide** shall, by continuous or periodic measurements or tests, obtain records satisfactory to the Board, and the Department of the Environment of:

- (a) where sulphur compounds are emitted to the atmosphere through a stack following incineration, the daily quantity of sulphur dioxide and any other sulphur present in the stack gases and the daily minimum stack gas emission temperature, or
- (b) where sulphur compounds are emitted to the atmosphere through a flare stack **without prior incineration**, the daily average volume of stack gases and the daily average concentration of hydrogen sulphide and of any other sulphur present in the stack gases.

(2) The operator of a processing plant which emits sulphur compounds to the atmosphere after incineration and is recovering more than 100 tonnes per day of sulphur or **emitting to the atmosphere gases containing more than 10 tonnes per day of sulphur**, shall obtain the operating data referred to in subsection (1), clause (a) on a continuous basis.

(3) If the total quantity of sulphur being emitted as determined under subsection (1) exceeds the quantity approved by the Board or the Department of the Environment, the operator of the plant shall take immediate measures to reduce the total emission of sulphur to within the approved limits.

*Ambient
air
standards*

*sulphur
emissions*

*flare
stack
emission
records*

(4) If the total quantity of sulphur emitted to the atmosphere in any day exceeds the quantity approved by the Board or the Department of the Environment by more than 50 per cent, the operator shall immediately report such emission to the Board by the quickest effective means.

(5) The operator of a processing plant shall not discharge or permit to be discharged from the plant to the atmosphere any gas containing hydrogen sulphide unless it is **burned so that essentially all of the sulphur is converted to sulphur dioxide**, but the Board on written application may approve another method of disposal.

(6) The operator of a processing plant shall conduct operations in such a manner as to

- (a) control the emission of sulphur dust to the satisfaction of the Board and the Department of the Environment,
- (b) control the emission of **unburned hydrocarbon vapours** to the satisfaction of the Board and the Department of the Environment,
- (c) control the emission of **odorous materials** to the satisfaction of the Board and the Department of the Environment,
- (d) control the emission of **smoke** to the satisfaction of the Board and the Department of the Environment, and
- (e) control **noise** to the satisfaction of the Board and the Department of the Environment.

(7) The disposal from a processing plant of water produced in association with gas or oil, shall be in accordance with section 8.040.

*water
disposal*

(8) The disposal of process waste water, sanitary waste or surface run-off water from a processing plant shall,

- (a) if to an underground formation, be in accordance with a scheme approved by the Board pursuant to section 38 of the Act and in accordance with a licence of the Department of the Environment, or
- (b) if to a body of surface water or a disposal pond, be in accordance with a licence of the Department of the Environment. (AR 151/71; AR 241/71; AR 71/74; AR 229/79)

9.060 The operator of a processing plant in which **gas containing more than 10 moles per kilomole hydrogen sulphide**, or such higher or lower ratio as the Board may by order stipulate, is being processed, shall, prior to the initial processing of gas, file with the Board and the Department of the Environment an **outline of emergency procedures to ensure public safety**, that will be followed in the event of an **uncontrolled release** of contaminants to the air, water or land from the processing plant. (AR 151/71; AR 71/74; AR 229/79)

*emergency
procedures*

9.070 (1) Where it appears to the Board that the operations of a scheme for the processing of gas has contravened or is contravening the Act, these regulations or an order of the Board, the Board may

(a) order that operations of the scheme be partially or totally suspended, or

(b) require that remedial measures be taken.

(2) When any operation of a scheme for the processing of gas is suspended, pursuant to subsection (1), the Board shall, within ten days of the suspension, hold an inquiry to investigate the circumstances leading to the suspension.

(3) After an inquiry pursuant to subsection (2), the Board may order that the suspension of any operation continue or that the processing scheme be shut down until such time as the Board otherwise orders. (AR 151/71; AR 71/74)

(Continued on page R-63)

Gas Processing and Underground Storage

15.050 (1) An application under section 9.020 for approval of a new scheme or an amendment to an existing scheme for the processing of gas shall include, when applicable, the information set out in subsections (3) and (4).

(2) The **application shall be structured in distinctly separate sections which contain information respecting,**

- (a) general matters,
- (b) the plant location,
- (c) conservation levels,
- (d) air pollution, and
- (e) water pollution.

(3) Where an application is made in two parts, as provided for in section 9.020, the first part of the application shall include, when applicable,

- (a) a map or maps covering the area within a 16 kilometre radius of the plant showing
 - (i) the plant location,
 - (ii) the topography of the area,
 - (iii) the location of all lakes, streams and other surface bodies of water in the area,
 - (iv) the location, where practical, of all occupied buildings within an 8 kilometre radius of the plant,
 - (v) the location of other gas processing or industrial plants in the area, and
 - (vi) the general land use of the area,
- (b) a general discussion of the overall process scheme proposed,
- (c) tabulations of
 - (i) the analysis of the raw gas from each pool from which the gas would be gathered and a composite analysis of the feed gas to the processing

- plant under normal operating conditions and anticipated conditions of maximum hydrogen sulphide content,
- (ii) an overall plant material balance based on normal operating conditions and anticipated conditions of maximum hydrogen sulphide inlet rate,
 - (iii) the maximum acid gas rate to the sulphur plant and the hydrogen sulphide content of the acid gas, under the maximum conditions referred to in subclause (i), and
 - (iv) a forecast of the raw gas to be processed and the plant products to be recovered by years over the life of the scheme,
- (d) a discussion of the reasons for the choice of the plant location having regard to the control of pollution,
- (e) evidence of any communications with the residents in the vicinity of the proposed plant to advise them of the company's plans in the area and the possible impact these plans could have on the local residents, where such communications have taken place,
- (f) technical evidence and cost data in support of the proposed recovery level of sulphur and hydrocarbons including an economic evaluation of the feasibility of conserving any sulphur or hydrocarbons that would not be recovered,
- (g) stack design data including
- (i) key dimensions,
 - (ii) the location of the incinerator and flare stacks within the plant area,
 - (iii) the elevation above sea level of the base of the incinerator and flare stacks,
 - (iv) minimum incinerator stack gas exit temperature,
 - (v) stack gas composition for the normal and maximum sulphur emission case,

- (vi) normal and maximum half-hour average incinerator stack gas sulphur dioxide concentration, and
- (vii) normal and maximum half-hour average sulphur emission rate,
- (h) evidence, including allocations of dilution gas where applicable, that the ~~plant~~ **plant and emergency stacks** have been designed to maintain the average maximum concentration of sulphur dioxide within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act or any other standards the Board or the Department of the Environment may specify for both normal operating conditions and conditions of maximum sulphur emissions,
- (i) a general discussion of the method proposed for control of hydrocarbon vapour emissions including **emissions from product storage tanks**,
- (j) a general discussion of the method proposed for control of sulphur dust,
- (k) a general discussion of the method proposed for **control of smoke**,
- (l) a general discussion of the method proposed for **control of odours**,
- (m) a general discussion of the method by which and the manner in which the **release** of any **other contaminant** to the atmosphere during normal or abnormal plant operations would be **controlled**,
- (n) a general discussion of the method proposed for control of **noise**,
- (o) a general discussion of the **monitoring program** for **hydrogen sulphide**, **sulphur dioxide** and sulphur dust in the surrounding area,
- (p) a general discussion of the manner in which **water** produced in association with gas and oil would be **treated and disposed of**,
- (q) a general discussion of the manner in which any **process waste water** would be contained, treated and disposed of,
- (r) a general discussion of the manner in which **surface water drainage** within the plant process and storage areas would be contained, treated and disposed of,

- (s) a general discussion of the manner in which sanitary sewage would be treated and disposed of,
 - (t) a general discussion of the manner in which the disposal of solid waste material would be conducted to minimize contamination of surface and ground waters,
 - (u) a general discussion of the method by which and the manner in which any other contaminant would be released to the surface water or disposed of to an underground formation,
 - (v) a general discussion of the proposed method of and frequency of monitoring of waste water volume flow rates and contaminant concentrations,
 - (w) a general discussion of the feasibility of using a single large gas processing plant in the area of the application, rather than two or more smaller plants or the feasibility of expanding a nearby existing gas processing plant to handle the additional gas which is to be processed in the proposed plant.
 - (x) such further information as the Board may require.
- (4) Where an application is made in two parts, as provided for in section 9.020, the second part of the application shall include, when applicable,
- (a) detailed information as to any changes in the information supplied under subsection (3) with, where appropriate, new plans, diagrams and statements,
 - (b) **maps showing**
 - (i) the **lessors and lessees of petroleum and natural gas rights within and adjoining the scheme area,**
 - (ii) the **status of each well** within and adjoining the scheme area for each zone in which it is completed, and
 - (iii) the **gathering facilities** including line size, and operating pressures,
 - (c) a detailed description of the overall process scheme,
 - (d) figures showing
 - (i) a process flow diagram of the proposed facilities,

- (ii) the **facilities for measurement** of all streams entering and leaving the processing plant or directly affecting the measurement of such streams,
- (e) a discussion of product specifications and composition and the facilities to be provided for product storage,
- (f) a discussion of the provisions made for **marketing or conservation of all plant products**,
- (g) a **scale plan of the plant site** showing
 - (i) the location of processing, storage and other facilities,
 - (ii) sewer lines,
 - (iii) the points of discharge of any contaminant from the plant,
 - (iv) the location of all air contaminant control equipment,
 - (v) the location of all waste water treatment facilities, and
 - (vi) the location of all surface drainage water control and treatment facilities,
- (h) a plan of the incinerator stack showing
 - (i) the size, location and height of sampling ports,
 - (ii) the access ladder and sampling platform, and
 - (iii) the locations of the exit temperature measuring device and electric power outlets,
- (i) a detailed description of the method proposed for control of **hydrocarbon vapour emissions** including emissions from product storage tanks,
- (j) a detailed description of the method proposed for control of sulphur dust,
- (k) a detailed description of the method proposed for **control of smoke**,

- (l) a detailed description of the method proposed for the control of **odours**,
- (m) a detailed description of the method by which and the manner in which the release of any **other contaminant** to the atmosphere during abnormal or normal plant operations would be controlled,
- (n) a detailed description of the method proposed for the control of **noise**,
- (o) a detailed description, including maps showing air quality monitoring installations, of the monitoring program for hydrogen sulphide, sulphur dioxide and sulphur dust in the surrounding area,
- (p) design details, supported by drawings where necessary, of the facilities to be provided for the **containment, treatment and disposal of water** produced in association with oil and gas, process waste water, surface drainage water and sanitary sewage including, where applicable,
 - (i) for detention lagoons and settling ponds, retention time based on design flow rates, removal efficiency with respect to suspended solids, sulphides, chemical oxygen demand and ammonia nitrogen, and percolation data respecting the permeability of the soil to indicate expected seepage,
 - (ii) for evaporation ponds, in addition to the information required by subclause (i), local evaporation and precipitation data,
 - (iii) for **oil separators**, retention time, design maximum flow rates, and oil removal efficiency, and
 - (iv) for **sour water strippers**, design flow rate, operating temperature and pressure, and hydrogen sulphide removal efficiency,
- (q) a discussion of the **type and the amount of chemicals** and processing materials **to be used**,
- (r) a statement of the **calculated concentration and emission rate of every contaminant** that would be **discharged from the plant**,

- (s) a discussion of the **plant start up procedures** to be followed having regard to the control of pollution,
- (t) an outline of **emergency procedures** to ensure public safety, that will be followed in the event of an uncontrolled release of contaminants to the air, water or land, as required by section 9.060, and
- (u) such further information as the Board may require.

(5) Where an application as defined in subsection (1) is made for a major modification to an existing scheme the application shall include

- (a) a discussion of the exact nature of the modification,
- (b) a discussion of the effect of the modification on the existing plant, and
- (c) the information required by subsections (3) and (4) where any changes from information previously filed would take place or where the information has not been previously submitted to the Board.

(AR 151/71; AR 69/72; AR 71/74; AR 229/79)

15.060 An application under section 38, clause (b) of the Act for approval of a new scheme or a major modification to an existing scheme, for the **underground storage of gas** shall include, when applicable

- (a) maps showing
 - (i) the area included in the scheme,
 - (ii) the lessors and lessees within and adjoining the scheme area, and
 - (iii) the status of each well within and adjoining the area for each zone in which it is completed, and the gas gathering facilities including line size and operations pressures,

- (b) a figure showing the facilities for the measurement of all relevant streams within the scheme area,
- (c) a tabulation of the analyses of raw gas from each pool from which gas will be gathered or injected,
- (d) evidence, including reservoir calculations, illustrating that the storage of gas is consistent with sound conservation practices,
- (e) a discussion of the method proposed for the control of pollution which might result from the gathering or injection of gas containing hydrogen sulphide, and
- (f) a discussion of the future disposition of the stored gas.

Water Disposal

15.070 An application under section 38, clause (c) of the Act for approval of a scheme for the gathering, storage and disposal of water produced in conjunction with oil or gas shall include, when applicable,

- (a) maps showing
 - (i) the location of the disposal well
 - (ii) the lessors and lessees within 3 kilometres of the proposed disposal well,
 - (iii) status of each well adjacent to the disposal well, and
 - (iv) the structure or isopachs of the pool into which fluids will be disposed,
- (b) figures showing
 - (i) geological cross-sections including the top and base of the formation, water-oil, gas-oil and gas-water interfaces,
 - (ii) completion details of the proposed disposal well including
 - (A) the depth of the packer,
 - (B) existing completion interval and the proposed disposal interval, and

PART 9

PROCESSING PLANTS

9.010 In this Part, except where the context otherwise requires, "sulphur" means all sulphur in whatever compound or physical form it may exist. (AR 151/71; AR 71/74)

9.020 (1) An application under section 38, subsection (1), clause (b) of the Act; section 4, subsection (1), clause (a) or section 4.1, subsection (1), of The Clean Air Act; or section 4, Subsection (1), clause (e) or section 4.1, clause (1) of The Clean Water Act, for approval of a new scheme or a major modification to an existing scheme for the processing of gas shall be filed with the Board and shall conform with the requirements of section 15.050.

(2) An application referred to in subsection (1) may be made in two parts, the first part concerning the location, conservation levels and pollution control features of the proposed scheme and being for approval to construct the proposed scheme, the second part concerning the other details of the scheme and being for approval to operate the proposed scheme.

(3) Upon the filing of a completed application, or where an application is to be made in two parts, upon the filing of a completed first part of an application for approval, or a major amendment of approval, of a scheme for the processing of gas and where it appears to the Board that its decision on the application

(a) may directly and adversely affect the rights of any person, the Board shall hold a public hearing or publish notice of the application, or

(b) would not directly and adversely affect the rights of any person, the Board may grant the application without notice or hearing.

(4) Where an application has been made in two parts, and where the Board, the Director of Standards and Approvals of the Department of the Environment and the Minister of the Environment have approved the location, conservation levels and pollution control features of the proposed scheme, the Board may consider the second part of the application without hearing or further notice of the application. (AR 151/71; AR 71/74)

9.030 (1) No person shall commence construction related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the location, conservation levels and pollution control

features of the scheme, and the Director of Standards and Approvals of the Department of the Environment has issued a permit to construct the necessary facilities pursuant to The Clean Air Act and The Clean Water Act.

(2) No person shall commence processing operations related to a new scheme or a major modification to an existing scheme for the processing of gas until the Board and the Minister of the Environment have approved the scheme and the Director of the Division of Standards and Approvals of the Department of the Environment has issued a licence to operate the scheme pursuant to The Clean Air Act and The Clean Water Act. (AR 151/71; AR 71/74)

9.040 The operator of a processing plant shall conduct operations in such a manner as to maintain the average maximum concentration of any air contaminant in the ambient air within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act or any other standards the Board or the Department of the Environment may specify. (AR 151/71; AR 71/74)

9.050 (1) Subject to subsection (2), the operator of a processing plant treating gas for removal of hydrogen sulphide shall, by continuous or periodic measurements or tests, obtain records satisfactory to the Board, and the Department of the Environment of:

- (a) where sulphur compounds are emitted to the atmosphere through a stack following incineration, the daily quantity of sulphur dioxide and any other sulphur present in the stack gases and the daily minimum stack gas emission temperature, or
- (b) where sulphur compounds are emitted to the atmosphere through a flare stack without prior incineration, the daily average volume of stack gases and the daily average concentration of hydrogen sulphide and of any other sulphur present in the stack gases.

(2) The operator of a processing plant which emits sulphur compounds to the atmosphere after incineration and is recovering more than 100 tonnes per day of sulphur or emitting to the atmosphere gases containing more than 10 tonnes per day of sulphur, shall obtain the operating data referred to in subsection (1), clause (a) on a continuous basis.

(3) If the total quantity of sulphur being emitted as determined under subsection (1) exceeds the quantity approved by the Board or the Department of the Environment, the operator of the plant shall take immediate measures to reduce the total emission of sulphur to within the approved limits.

- (4) If the total quantity of sulphur emitted to the atmosphere in any day exceeds the quantity approved by the Board or the Department of the Environment by more than 50 per cent, the operator shall immediately report such emission to the Board by the quickest effective means.
- (5) The operator of a processing plant shall not discharge or permit to be discharged from the plant to the atmosphere any gas containing hydrogen sulphide unless it is burned so that essentially all of the sulphur is converted to sulphur dioxide, but the Board on written application may approve another method of disposal.
- (6) The operator of a processing plant shall conduct operations in such a manner as to
- (a) control the emission of sulphur dust to the satisfaction of the Board and the Department of the Environment,
 - (b) control the emission of unburned hydrocarbon vapours to the satisfaction of the Board and the Department of the Environment,
 - (c) control the emission of odourous materials to the satisfaction of the Board and the Department of the Environment,
 - (d) control the emission of smoke to the satisfaction of the Board and the Department of the Environment, and
 - (e) control noise to the satisfaction of the Board and the Department of the Environment.
- (7) The disposal from a processing plant of water produced in association with gas or oil, shall be in accordance with section 8.040.
- (8) The disposal of process waste water, sanitary waste or surface run-off water from a processing plant shall,
- (a) if to an underground formation, be in accordance with a scheme approved by the Board pursuant to section 38 of the Act and in accordance with a licence of the Department of the Environment, or
 - (b) if to a body of surface water or a disposal pond, be in accordance with a licence of the Department of the Environment. (AR 151/71; AR 241/71; AR 71/74; AR 229/79)

9.060 The operator of a processing plant in which gas containing more than 10 moles per kilomole hydrogen sulphide, or such higher or lower ratio as the Board may by order stipulate, is being processed, shall, prior to the initial processing of gas, file with the Board and the Department of the Environment an outline of emergency procedures to ensure public safety, that will be followed in the event of an uncontrolled release of contaminants to the air, water or land from the processing plant. (AR 151/71; AR 71/74; AR 229/79)

9.070 (1) Where it appears to the Board that the operations of a scheme for the processing of gas has contravened or is contravening the Act, these regulations or an order of the Board, the Board may

(a) order that operations of the scheme be partially or totally suspended, or

(b) require that remedial measures be taken.

(2) When any operation of a scheme for the processing of gas is suspended, pursuant to subsection (1), the Board shall, within ten days of the suspension, hold an inquiry to investigate the circumstances leading to the suspension.

(3) After an inquiry pursuant to subsection (2), the Board may order that the suspension of any operation continue or that the processing scheme be shut down until such time as the Board otherwise orders. (AR 151/71; AR 71/74)

(Continued on page R-63)

Gas Processing and Underground Storage

15.050 (1) An application under section 9.020 for approval of a new scheme or an amendment to an existing scheme for the processing of gas shall include, when applicable, the information set out in subsections (3) and (4).

(2) The application shall be structured in distinctly separate sections which contain information respecting,

- (a) general matters,
- (b) the plant location,
- (c) conservation levels,
- (d) air pollution, and
- (e) water pollution.

(3) Where an application is made in two parts, as provided for in section 9.020, the first part of the application shall include, when applicable,

- (a) a map or maps covering the area within a 16 kilometre radius of the plant showing

No

- (i) the plant location,
- (ii) the topography of the area,
- (iii) the location of all lakes, streams and other surface bodies of water in the area,
- (iv) the location, where practical, of all occupied buildings within an 8 kilometre radius of the plant,
- (v) the location of other gas processing or industrial plants in the area, and
- (vi) the general land use of the area,

Yes
through
flow chart

- (b) a general discussion of the overall process scheme proposed,
- (c) tabulations of

No

- (i) the analysis of the raw gas from each pool from which the gas would be gathered and a composite analysis of the feed gas to the processing

plant under normal operating conditions and anticipated conditions of maximum hydrogen sulphide content,

- No* (ii) an overall plant material balance based on normal operating conditions and anticipated conditions of maximum hydrogen sulphide inlet rate,
- Yes 3.0 MMSCFD* (iii) the maximum acid gas rate to the sulphur plant and the hydrogen sulphide content of the acid gas, under the maximum conditions referred to in subclause (i), and
- No* (iv) a forecast of the raw gas to be processed and the plant products to be recovered by years over the life of the scheme,
- No* (d) a discussion of the reasons for the choice of the plant location having regard to the control of pollution,
- No* (e) evidence of any communications with the residents in the vicinity of the proposed plant to advise them of the company's plans in the area and the possible impact these plan could have on the local residents, where such communications have taken place,
- No* (f) technical evidence and cost data in support of the proposed recovery level of sulphur and hydrocarbons including an economic evaluation of the feasibility of conserving any sulphur or hydrocarbons that would not be recovered,
- (g) stack design data including
- 40' high* (i) key dimensions,
- 400* (ii) the location of the incinerator and flare stacks within the plant area,
- No* (iii) the elevation above sea level of the base of the incinerator and flare stacks,
- No* (iv) minimum incinerator stack gas exit temperature,
- No* (v) stack gas composition for the normal and maximum sulphur emission case,

- No (vi) normal and maximum half-hour average incinerator stack gas sulphur dioxide concentration, and
- No (vii) normal and maximum half-hour average sulphur emission rate,
- No (h) evidence, including allocations of dilution gas where applicable, that the main and emergency stacks have been designed to maintain the average maximum concentration of sulphur dioxide within the maximum permissible concentrations set out in the Clean Air (Maximum Levels) Regulations under The Clean Air Act or any other standards the Board or the Department of the Environment may specify for both normal operating conditions and conditions of maximum sulphur emissions,
- No (i) a general discussion of the method proposed for control of hydrocarbon vapour emissions including emissions from product storage tanks,
- N/A (j) a general discussion of the method proposed for control of sulphur dust,
- No (k) a general discussion of the method proposed for control of smoke,
- No (l) a general discussion of the method proposed for control of odours,
- No (m) a general discussion of the method by which and the manner in which the release of any other contaminant to the atmosphere during normal or abnormal plant operations would be controlled,
- No (n) a general discussion of the method proposed for control of noise,
- No (o) a general discussion of the monitoring program for hydrogen sulphide, sulphur dioxide and sulphur dust in the surrounding area,
- No (p) a general discussion of the manner in which water produced in association with gas and oil would be treated and disposed of,
- No (q) a general discussion of the manner in which any process waste water would be contained, treated and disposed of,
- No (r) a general discussion of the manner in which surface water drainage within the plant process and storage areas would be contained, treated and disposed of.

- No* (s) a general discussion of the manner in which sanitary sewage would be treated and disposed of,
- No* (t) a general discussion of the manner in which the disposal of solid waste material would be conducted to minimize contamination of surface and ground waters,
- No* (u) a general discussion of the method by which and the manner in which any other contaminant would be released to the surface water or disposed of to an underground formation,
- No* (v) a general discussion of the proposed method of and frequency of monitoring of waste water volume flow rates and contaminant concentrations,
- N/A* (w) a general discussion of the feasibility of using a single large gas processing plant in the area of the application, rather than two or more smaller plants or the feasibility of expanding a nearby existing gas processing plant to handle the additional gas which is to be processed in the proposed plant.
- (x) such further information as the Board may require.

(4) Where an application is made in two parts, as provided for in section 9.020, the second part of the application shall include, when applicable,

- (a) detailed information as to any changes in the information supplied under subsection (3) with, where appropriate, new plans, diagrams and statements,
- (b) maps showing
 - No* (i) the lessors and lessees of petroleum and natural gas rights within and adjoining the scheme area,
 - No* (ii) the status of each well within and adjoining the scheme area for each zone in which it is completed, and
 - Partly* (iii) the gathering facilities including line size, and operating pressures,
- Thru Flowchart* ✓ (c) a detailed description of the overall process scheme,
- (d) figures showing
 - Yes* (i) a process flow diagram of the proposed facilities,

*Metering
Points only*

- (ii) the facilities for measurement of all streams entering and leaving the processing plant or directly affecting the measurement of such streams,

Partly

- (e) a discussion of product specifications and composition and the facilities to be provided for product storage,

No

- (f) a discussion of the provisions made for marketing or conservation of all plant products,

- (g) a scale plan of the plant site showing

1/10

- (i) the location of processing, storage and other facilities,

No

- (ii) sewer lines,

*other than
Flare stack*

No

- (iii) the points of discharge of any contaminant from the plant,

No

- (iv) the location of all air contaminant control equipment,

No

- (v) the location of all waste water treatment facilities, and

No

- (vi) the location of all surface drainage water control and treatment facilities,

- (h) a plan of the incinerator stack showing

No

- (i) the size, location and height of sampling ports,

No

- (ii) the access ladder and sampling platform, and

No

- (iii) the locations of the exit temperature measuring device and electric power outlets,

No

- (i) a detailed description of the method proposed for control of hydrocarbon vapour emissions including emissions from product storage tanks,

No

- (j) a detailed description of the method proposed for control of sulphur dust,

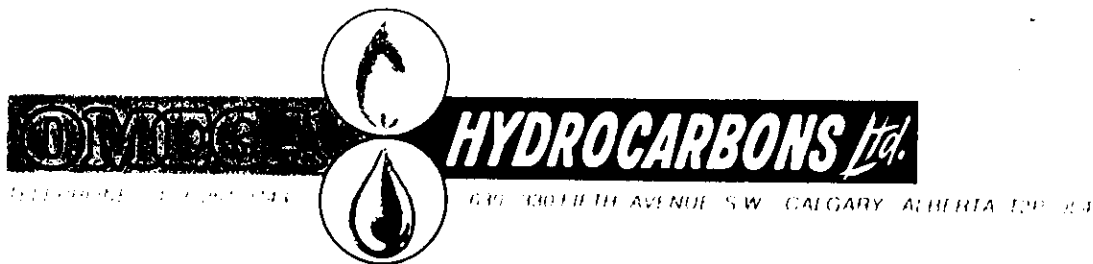
No

- (k) a detailed description of the method proposed for control of smoke,

No

- (l) a detailed description of the method proposed for the control of odours,
- (m) a detailed description of the method by which and the manner in which the release of any other contaminant to the atmosphere during abnormal or normal plant operations would be controlled,
- (n) a detailed description of the method proposed for the control of noise,
- (o) a detailed description, including maps showing air quality monitoring installations, of the monitoring program for hydrogen sulphide, sulphur dioxide and sulphur dust in the surrounding area,
- (p) design details, supported by drawings where necessary, of the facilities to be provided for the containment, treatment and disposal of water produced in association with oil and gas, process waste water, surface drainage water and sanitary sewage including, where applicable,
 - (i) for detention lagoons and settling ponds, retention time based on design flow rates, removal efficiency with respect to suspended solids, sulphides, chemical oxygen demand and ammonia nitrogen, and percolation data respecting the permeability of the soil to indicate expected seepage,
 - (ii) for evaporation ponds, in addition to the information required by subclause (i), local evaporation and precipitation data,
 - (iii) for oil separators, retention time, design maximum flow rates, and oil removal efficiency, and
 - (iv) for sour water strippers, design flow rate, operating temperature and pressure, and hydrogen sulphide removal efficiency,
- (q) a discussion of the type and the amount of chemicals and processing materials to be used,
- (r) a statement of the calculated concentration and emission rate of every contaminant that would be discharged from the plant,

- No (s) a discussion of the plant start up procedures to be followed having regard to the control of pollution,
- No (t) an outline of emergency procedures to ensure public safety, that will be followed in the event of an uncontrolled release of contaminants to the air, water or land, as required by section 9.060, and
- (u) such further information as the Board may require.
- (5) Where an application as defined in subsection (1) is made for a major modification to an existing scheme the application shall include
- (a) a discussion of the exact nature of the modification,
 - (b) a discussion of the effect of the modification on the existing plant, and
 - (c) the information required by subsections (3) and (4) where any changes from information previously filed would take place or where the information has not been previously submitted to the Board.
(AR 151/71; AR 69/72; AR 71/74; AR 229/79)
- 15.060 An application under section 38, clause (b) of the Act for approval of a new scheme or a major modification to an existing scheme, for the underground storage of gas shall include, when applicable
- (a) maps showing
 - (i) the area included in the scheme,
 - (ii) the lessors and lessees within and adjoining the scheme area, and
 - (iii) the status of each well within and adjoining the area for each zone in which it is completed, and the gas gathering facilities including line size and operations pressures,



April 7, 1983

Department of Energy & Mines
Oil & Gas Conservation Board
989 - Century Street
Winnipeg, Manitoba
R3H 0W4

ATTENTION: Dr. Ian Haugh

Dear Sir:

RE: Omega Hydrocarbons Ltd. request for
approval to Construct a Gas Plant
at Waskada, Manitoba for the
extraction of Natural Gas Liquids
and re-injection of the natural gas.

Omega Hydrocarbons Ltd. requests the Manitoba Government approval to construct a gas plant at Waskada. The plant will be designed to process up to 3,000 mcf/day of solution gas with the process consisting of a gas sweetener to remove the small amounts of hydrogen sulfide, the extraction of salable propane & butane along with the recovery of pentanes plus. The processed natural gas will be re-injected into the Spearfish formation as a means of pressure maintenance. The injected gas would remain in the reservoir as long as the gas injection scheme is beneficial and then would be produced back for sale.

In addition to recovering the natural gas liquids and conserving the natural gas, the injected gas acts as an excellent tertiary recovery scheme for the recovery of the Spearfish oil. This has been confirmed by a "Compositional Model Study Performance Prediction of a Gas Injection Scheme" of a selected number of our wells in Waskada. We are only requesting approval to build the gas plant & will be making a separate application for the actual injection of gas into the Spearfish zone.

We have reviewed the Manitoba regulations & were unable to locate any specific regulations for the construction of a Gas Plant. In view of this we have designed the Plant to meet normal good engineering practice as specified by the Alberta Oil & Gas Conservation Board.

x.c. - H. Clare Moster (with original attachments)
April 15, 1983 - IH/ra

The plant will also conform to all Environmental & Pollution regulations specified by the Manitoba Government.

In support of our application we have attached the following information for your review.

1. Plot Plan showing location of Omega's existing battery and location of proposed plant.
2. Three Process Flow Schematic Drawings showing all process equipment, operating conditions and products.
3. Additional information will be supplied as requested.

We are most anxious to obtain approval for construction of this plant as considerable lead time is required with the supplier indicating 18-20 weeks for delivery and another 6-8 weeks for installation & start-up.

Yours truly,



G. E. Patey
V. P. Production

GP/cw

March 2, 1983

Bruce Ball
Energy Economics Branch
Dept. of Energy & Mines
200 - 500 Portage Avenue

L. R. Dubreuil
Chief Petroleum Engineer
Petroleum Branch
Mineral Resources Division
975 Century St.

GAS PRODUCTION - WASKADA AREA

Gas in the Waskada area is solution gas (i.e.: dissolved in the oil). As the oil is produced, the gas is separated from the oil and is either used for treater fuel or is flared.

Table I, attached, is a rough estimate of the volumes of gas currently being produced, used for fuel, and flared.

Gas production volumes are primarily dependent on oil production volumes with a secondary dependence on reservoir pressure (if reservoir pressure is below the bubble point, excess gas production could occur). Over the near term, (\pm 3 months) gas volumes are expected to increase only slightly. If drilling success experienced during 1982 continues and pressure maintenance projects prove successful, a peak gas production rate of up to 2.0 MMSCFD occurring in 1984 or 1985 is estimated.

The percentage of produced gas used for treater fuel would likely remain fairly constant over the next few years.

The gas is flared or vented at the production facilities. Omega's battery at 11-30-1-25 processes roughly 85% of the production with a number of smaller facilities making up the remainder.

No analysis of the gas being flared in Waskada is available at this time, however, we have received indications that the gas is quite rich in liquids and that some operators are considering liquids recovery. It should be noted that any plans to utilize the gas for domestic or industrial purposes would require a backup source of supply, as the primary source could be interrupted by operational problems without notice.

Certified Signed by
L. R. DUBREUIL

L. R. Dubreuil

LED/sb

cc: - H. Clare Moster
Director
Petroleum Branch

TABLE I

ESTIMATED GAS PRODUCTION

January 1983

Gas Production: = 1.416 MMSCFD or 40,101 m³/d

Gas Disposition:

Treater Fuel = 0.235 MMSCFD or 6,662 m³/d

Gas Flared = 1.181 MMSCFD or 33,489 m³/d

TOTAL 1.416 MMSCFD or 40,101 m³/d

Manitoba

John


Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

November 6, 1990

Mr. R.A. Brekke, P. Eng.
Engineering Supervisor - Manitoba
Omega Hydrocarbons Ltd.
1300, 112 - 4th Avenue S.W.
Calgary., Alberta
T2P 0H3

Dear Richard:

RE: Lease Tank Gas Measurement - Waskada Field

Your request to use a constant gas-oil ratio (GOR) of $75 \text{ m}^3/\text{m}^3$ to estimate gas production for wells producing to lease tanks in the Waskada Field is approved.

To ensure use of a GOR of $75 \text{ m}^3/\text{m}^3$ remains acceptable, Omega is requested to use the Battery GOR calculation (excluding the 3-30-1-25 and 4-30-1-25 wells) to check the producing GOR of wells tied into the battery at least quarterly. Please advise the Petroleum Branch if the Battery GOR calculation (excluding the 3-30-1-25 and 4-30-1-25 wells) yields a GOR in excess of 100 m^3 for two consecutive quarters.

If you have any questions please contact John N. Fox, Chief Petroleum Engineer or Brad Thiessen, Manager, Petroleum Administration at 945-6574 and 945-6571 respectively.



L.R. Dubreuil
Director

cc: Brad Thiessen



1300 SUN LIFE PLAZA III
112 - 4th AVENUE S.W.
CALGARY, ALBERTA, CANADA T2P 0H3
TELEPHONE (403) 261-0743
FAX (403) 264-5691

October 26, 1990



MANITOBA ENERGY & MINES
Petroleum Branch
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. John Fox
Chief Petroleum Engineer

Dear Sir:

Re: Waskada Lease Tank GOR Calculations

After reviewing the existing gas/oil ratio calculation being used to estimate gas production for the Waskada lease tank wells, Omega Hydrocarbons Ltd. is of the opinion that the values are overstated due to gas cycling which is taking place in Waskada Unit No. 1. The existing production accounting system has been set up to automatically calculate a battery gas/oil ratio based on tied in gas and oil production for use at the lease tank wells. This method was realistic until wells 3-30-1-25 and 4-30-1-25 WPM started to exhibit gas breakthrough.

	Existing Battery GOR Calculation (m ³ /m ³)	Battery GOR Calculation w/o 3-30, 4-30 (m ³ /m ³)
January 1990	134	79
February 1990	160	92
March 1990	153	85
April 1990	147	79
May 1990	151	76
August 1990	158	57
AVERAGE	150	78

Since the existing calculation method does not properly characterize the expected solution gas production from the lease tank wells it is proposed that a constant gas/oil ratio of $75 \text{ m}^3/\text{m}^3$ be used for estimating lease tank production starting with the production month of October 1990.

If you have any concerns with respect to this production accounting modification contact the undersigned at (403) 261-0743.

Yours truly,

OMEGA HYDROCARBONS LTD.



R.A. Brekke, P. Eng.
Engineering Supervisor - Manitoba

RAB:jb

c.c.: B. Thiessen - Petroleum Branch
D. Burwash
Waskada Production Accounting File