In Reply Refer To: MS 5231

January 16, 1996

Challenger Minerals Inc.
Attention: Mr. Tom J. Morrow
10777 Westheimer, Suite 700
Houston, Texas 77042

Gentlemen:

Reference is made to the following plan received December 12, 1995:

Type Plan - Supplemental Plan of Exploration
Lease - OCS-G 12989
Block - 78
Area - Grand Isle
Activities Proposed - Wells A through D

In accordance with 30 CFR 250.33, this plan is hereby deemed submitted and is now being considered for approval.

Your control number is S-3839 and should be referenced in your communication and correspondence concerning this plan.

Sincerely,

Donald C. Howard
Regional Supervisor
Field Operations

bcc: Lease OCS-G 12989 POD File (MS 5032)
MS 5034 w/public info. copy of the plan
and accomp. info.

DTrocquet:cic:01/09/96:POECOM

NOTED-SCHEXNAILDRE

CHALLENGER MINERALS INC.
A Subsidiary of Global Marine Inc.
10777 Westheimer, Suite 700 Houston, Texas 77042 (713) 266-9050

December 11, 1995

Mr. Donald C. Howard
Regional Supervisor
Office of Field Operations
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

RE: Supplemental Plan of Exploration
Grand Isle Block 78, Lease OCS-G 12989
OCS Federal Waters, Gulf of Mexico, Offshore, LA

Gentlemen:

In accordance with the provisions of Title 30 CFR 250.33, Challenger Minerals Inc. (Challenger) hereby submits for your review and approval nine (9) copies of an Supplemental Plan of Exploration for Lease OCS-G 12989, Grand Isle Block 78, Offshore, Louisiana. Five (5) copies are "Proprietary Information" and six (6) copies are "Public Information".

Excluded from the Public Information copies are certain geologic discussions, depth of wells and structure map.

Challenger anticipates activities will commence under this proposed Supplemental Plan of Exploration on approximately January 15, 1996.

Should additional information be required, please contact Challenger's regulatory agent, Sharon L. Perez, J. Connor Consulting, Inc., at (713) 578-3388.

Sincerely,

CHALLENGER MINERALS INC.

"Public Information"

Tom J. Morrow

Tom J. Morrow
Manager, Business Development

TJM:SLP:cag
Enclosures

CHALLENGER MINERALS INC.

SUPPLEMENTAL PLAN OF EXPLORATION

LEASE OCS-G 12989

GRAND ISLE BLOCK 78

Challenger Minerals Inc., hereby submits this proposed Supplemental Plan of Exploration in accordance with the regulations contained in Title 30 CFR 250.33 and more specifically defined in the Minerals Management Service Letters to Lessees and Operators dated October 12, 1988 and September 5, 1989.

HISTORY OF LEASES

Lease OCS-G 12989 was acquired by Howell Petroleum Corporation at the Central Gulf of Mexico Lease Sale 131 held on March 27, 1991. The effective date of the subject oil and gas lease is May 1, 1991 with primary term ending date of April 30, 1996.

Challenger Minerals Inc. is in the process of becoming designated operator of the subject oil and gas lease.

Howell Petroleum Corporation submitted an Supplemental Plan of Exploration which provided for the drilling of two (2) exploratory wells in Grand Isle Block 78.

In accordance with Letter to Lessees and Operators (LTL) dated November 5, 1993 which amends Title 30 CFR Part 256 surety bond requirements applicable to OCS lessees and operators, Challenger Minerals Inc. has submitted a $300,000 areawide bond and is in the process of submitting a $200,000 bond.

SCHEDULE OF OPERATIONS

Under this Supplemental Plan of Exploration, Challenger proposes the drilling, completion and testing of four (4) exploratory wells in Grand Isle Block 78. Planned commencement date is approximately January 15, 1996, subject to the approval of this Supplemental Plan of Exploration and issuance of the required Permits to Drill.

It should be emphasized that this schedule is tentative in the meaning of Title 30 CFR 250.33-1. Additional exploratory drilling must be predicated upon the need to further define the structures and/or reservoir limitations.

In addition to the drilling of the subject wells, other activities which may be conducted under this Plan are the setting of well protector type structures, seafloor templates, velocity surveys in wellbores, and the collection of soil borings.

DESCRIPTION OF DRILLING UNIT

Offshore exploratory activities are carried out from mobile drilling rigs. The five most common types of mobile rigs employed for exploratory drilling offshore are submersible drilling rigs, semi-submersible drilling rigs, jack-up drilling rigs, drillships, and drill barges.

The proposed wells will be drilled and completed with a typical jack-up drilling rig. When a rig is selected, the rig specifications will be made a part of the Applications for Permit to Drill. Typical Diverter and BOP Schematics are included as Attachments A-1 and A-2.

Safety features will include well control and blowout prevention equipment as described in Title 30 CFR 250.50. The appropriate life rafts, life jackets, ring buoys, etc., as prescribed by the U. S. Coast Guard will be maintained on the facility at all times.

WELL LOCATIONS

The approximate location of the proposed wells in this Supplemental Plan of Exploration are shown on the Well Location Table and accompanying Location Plat included as Attachments B-1 and B-2.

STRUCTURE MAP

A current structure map drawn to the top of the prospective hydrocarbon accumulation showing the surface and bottom hole locations of the proposed wells is included as Attachment C.

CROSS SECTION MAP

A cross section map depicting the proposed well locations, other significant wells, the geologic name and age of the anticipated structure is included as Attachment D.

BATHYMETRY MAP

Water depths in Grand Isle Block 78 range from approximately 160 feet to 194 feet. The seafloor slopes toward the southeast with a dip of about eight feet/mile in the northwest half of the block, increasing to nine feet/mile in the southeastern half of the tract.

A bathymetry map showing the proposed surface locations of the subject wells is included as Attachment E.

SHALLOW HAZARDS

In June, 1993, Gulf Ocean Services, Inc. conducted a geophysical survey of Grand Isle Block 78 for Howell Petroleum Corporation. The purpose of the survey was to evaluate geologic conditions and inspect for potential hazards or constraints to lease development.

A shallow hazards analysis was prepared and submitted for the proposed surface locations in Grand Isle Block 78, evaluating any seafloor and subsurface geologic and manmade features and conditions is included at Attachment E.

OIL SPILL CONTINGENCY PLAN

All drilling and completion operations shall be performed in accordance with industry standards to prevent pollution of the environment. The Oil Spill Contingency Plan is being reviewed for approval by MMS. This plan designates an Oil Spill Response Team consisting of the Challenger Minerals Inc.'s personnel and contract personnel. This team's duties are to eliminate the source of any spill, remove all sources of possible ignition, deploy the most reliable means of available transportation to monitor the movement of a slick, and contain and remove the slick if possible.

Challenger's Oil Spill Response Team attends drills for familiarization with pollution-control equipment and operation procedures on an annual basis.

Challenger is a member of Clean Gulf Associates (CGA). The CGA stores pollution control equipment at two locations in Texas, at Port Aransas and Galveston; five locations in Louisiana, at Venice, Grand Isle, Intracoastal City, Houma and Cameron and one location in Alabama, at Theodore.

Each base is equipped with fast response skimmers and there is a barge mounted high volume open sea skimmer based at Grand Isle, Louisiana. In addition to providing equipment, the CGA also supplies advisors for clean-up operations. Equipment available from CGA and the base it is located at is listed in the CGA Manual, Volume I, Section III.

Challenger will make every effort to see that a spill is responded to as quickly as possible. Response equipment and response times will be suitable for anticipated environmental conditions in the area.

In good weather conditions fast response with oil boom, skimmers, pump and storage tanks would require approximately 9 to 11hours, including preparation time as indicated below. A heavy equipment system response would require approximately 24-36 hours, including 6 hours preparation time.

		Hours
1.	Procurement of marine vessel capable of handling oil spill containment equipment and deployment to nearest CGA Base in Grand Isle, LA	2.5
2.	Travel time to Lease Site (Inland Travel - 2 miles @ 6 MPH) (Open Water Travel - 35 miles @ 10 MPH)	1.0 3.5
3.	Load out Fast Response Unit	1.5
4.	Deployment of Equipment	1.0
	Estimated Total Time	9.5

Equipment located in Grand Isle, Louisiana would be utilized first with additional equipment transported from the nearest equipment base as required.

In the event a spill occurs from the proposed surface locations in Grand Isle Block 78, our company has projected trajectory of a spill has been prepared utilizing information in the Environmental Impact Statement (EIS) for OCS Lease Sales 142 and 143.

The EIS contains oil spill trajectory simulations using seasonal surface current coupled with wind data, these adjusted every three hours for 30 days or until a target is contacted.

Hypothetical spill trajectories were simulated for each of the potential launch sites across the entire Gulf. These simulations presume 500 spills occurring in each of the four seasons of the year. The results in the EIS were presented as probabilities that an oil spill beginning from a particular launch site would contact a certain land segment within 3, 10 or 30 days.

Utilizing the summary of the trajectory analysis (for 10 days), the probability of a oil spill impacting a land fall is as follows:

Area/Block	Landfall Segment	%	CGA Map No.
Grand Isle Block 78	Terrebonne, LA	3%	LA Map No. 6
	Lafourche, LA	5%	LA Map No. 6
	Jefferson, LA	1%	LA Map No. 6 & 7

If a spill should occur from the proposed surface locations, Challenger would immediately activate its Emergency Response Team, determine from current conditions the probable location and time of land fall by contacting Continental Shelf Associates and/or the National Oceanic Atmospheric Administration's (NOAA) Gulf of Mexico Scientific Support Coordinator (SSC). Then, using the Clean Gulf Operations Manual, Volume II, identify any biologically sensitive areas and determine the appropriate response mode.

Section VI, Volume II of the CGA Operations Manual depicts the protection response modes that are applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Implementation of the suggested procedures assures the most effective use of the equipment and will result in reduced adverse impact of oil spills on the environment. Supervisory personnel have the option to modify the deployment and operation of equipment to more effectively respond to site-specific circumstances.

NEW OR UNUSUAL TECHNOLOGY

No new techniques or unusual technology will be required for these operations.

LEASE STIPULATIONS

Oil and gas exploration activities on the OCS are subject to stipulations developed before the lease sale and would be attached to the lease instrument, as necessary, in the form of mitigating measures. The MMS is responsible for ensuring full compliance with stipulations.

Lease Stipulation No. 1 attached to the subject lease instrument requires preparation of a Cultural Resources Report assessing the potential existence of any cultural resources.

This stipulation provides protection of prehistoric and historic archaeological resources by requiring remote sensing surveys in areas designated to have a high probability for archaeological resources and by requiring protection of archaeological resources discovered outside of the designated high probability zones.

A Cultural Resources Report assessing the existence of any cultural resources in Grand Isle Block 78 was previously submitted with the Supplemental Plan of Exploration.

DISCHARGES

All discharges associated with drilling and completing the subject wells will be in accordance with regulations implemented by Minerals Management Service (MMS), U. S. Environmental Protection Agency (EPA), and the U. S. Coast Guard (USCG).

The MMS issued a special advisory notice (NTL 86-11) strongly encouraging the oil and gas industry to take special educational, operational and awareness measures to reduce or eliminate contributions to marine debris in the Gulf of Mexico.

Annex V of the International Convention for the Prevention of Pollution from ships, also known as MARPOL Protocol, prohibits the dumping of all plastic wastes, including plastic packaging materials and fishing gear.

EPA's Western Gulf of Mexico NPDES General Permit GMG290000 addresses the discharge limitations and testing protocol for drilling fluids, cuttings and associated wastes.

Discharges will contain no free oil and will be in compliance with and monitored as required by the permit. Any drilling fluid contaminated with oil will be transported to shore for proper disposal at an authorized disposal site.

Solid domestic wastes will be transported to shore for proper disposal at an authorized disposal site, and sewage will be treated on location by U. S. Coast Guard approved marine sanitation devices.

Mud may be discharged for purposes of dilution or at end of well. Surveillance of the fluid is accomplished through daily inventory of mud and chemicals added to the system; in addition to monthly and end-of-well LC50 toxicity tests required by EPA. Typical mud components which may be used in the drilling of the proposed wells are included as Attachment G.

The anticipated discharges associated with Challenger's operations in Grand Isle Block 78 is included as Attachment H.

HYDROGEN SULFIDE

In accordance with Title 30 CFR 250.67, Challenger Minerals Inc. requests that Grand Isle Block 78 be classified by the Minerals Management Service as an area where the absence of hydrogen sulfide has been confirmed.

PROJECTED EMISSIONS

Offshore air emissions related to the proposed activities result from mainly from the drilling rig operations, helicopters and service vessels. These emissions occur mainly from combustion or burning of fuels and natural gas and from venting or evaporation of hydrocarbons. The combustion of fuels occurs primarily on diesel-powered generators, pumps or motors and from lighter fuel motors. Other air emissions can result from catastrophic events such as oil spills or blowouts.

Primary air pollutants associated with OCS activities are nitrogen oxides, carbon monoxide, sulphur oxides, volatile organic compound, and suspended particulate.

Projected Air Quality Emissions included as Attachment I, addresses the drilling, completion and testing of the proposed four (4) exploratory wells.

ONSHORE SUPPORT BASE

Grand Isle Block 78 is located approximately 30 miles from the nearest Louisiana shoreline and 35 miles from onshore support base located in Grand Isle, Louisiana. Waters depths in Grand Isle Block 78 ranges from 160 feet to 194 feet. A Vicinity Plat showing the location of Grand Isle Block 78 relative to the shoreline and onshore base is included as Attachment J.

Challenger will utilize onshore facilities located in Grand Isle, Louisiana. This will serve as port of debarkation for supplies and crews. No onshore expansion or construction is anticipated with respect to the proposed activities.

This base is capable of providing the services necessary for the proposed activities. It has 24-hour service, a radio tower with a phone patch, dock space, equipment and supply storage base, drinking and drill water, etc. Support vessels and travel frequency during drilling and completion activities are as follows:

	DRILLING/COMPLETION OPERATIONS
Crew Boat	5 Trips Per Week
Supply Boat	3 Trips Per Week
Helicopter	2 Trips Per Week

AUTHORIZED REPRESENTATIVE

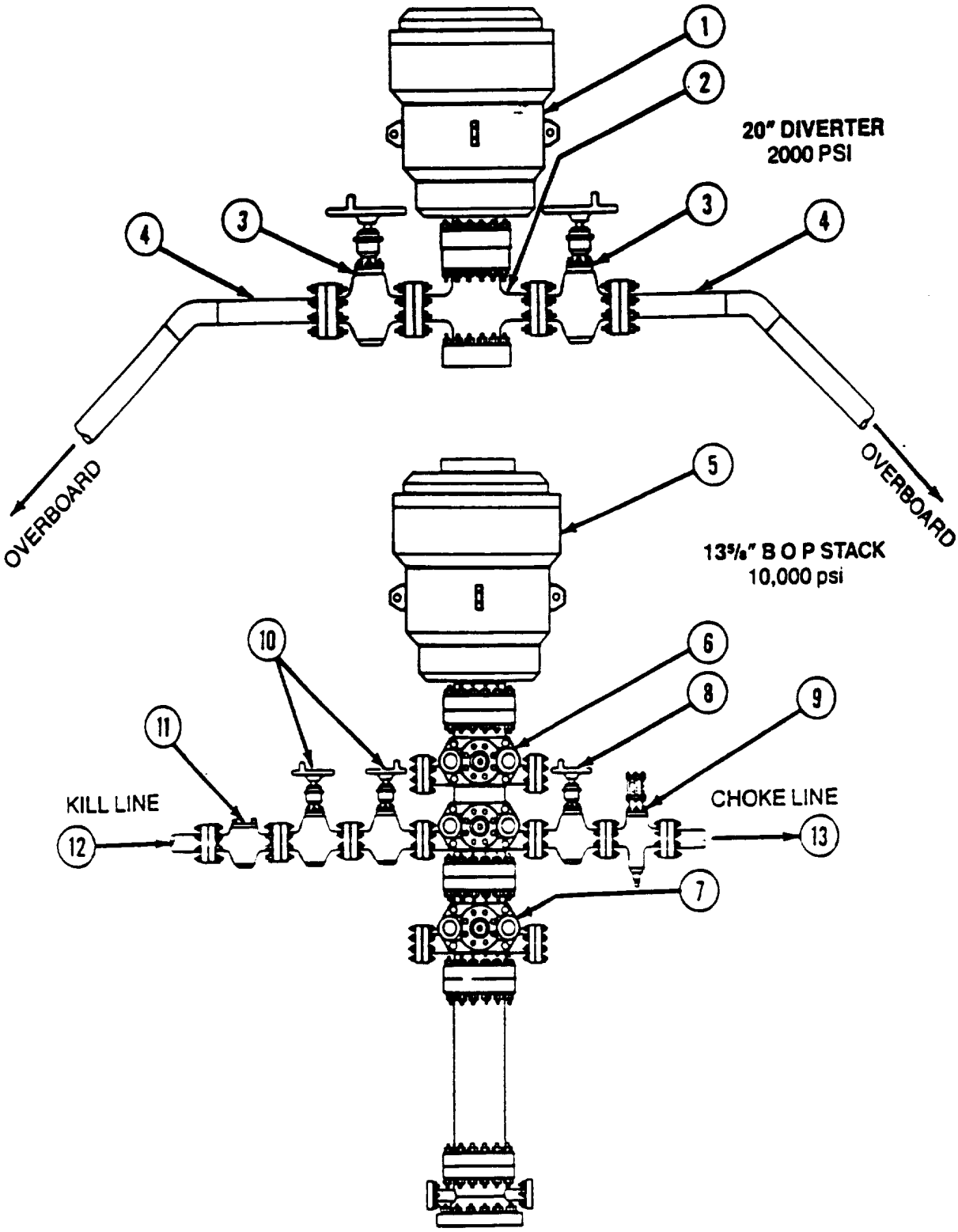
Inquiries may be made to the following authorized representative:

Sharon L. Perez
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 500
Houston, Texas 77084
(713) 578-3388

LIST OF ATTACHMENTS

A Typical Diverter and Blowout Preventer Schematic
B Well Location Table and Plat
C Structure Map
D Cross Section Map
E Bathymetry Map
F Shallow Hazards Statement
G Typical Mud Components
H Quantities and Rates of Discharges
I Projected Air Emissions
J Vicinity Map

BLOWOUT PREVENTER STACK
WITH A
HYDRIL DIVERTER



Refer to following page for description of individual items of this assembly.

20" HYDRIL DIVERTER 2000 psi

ITEM	DESCRIPTION
1	**20" HYDRIL** 2000 psi Type MSP
2	**20" FLANGE SPOOL** 2000 psi w/6" 2000 psi Outlets
3	**6" GATE VALVE** std Low Pressure (REMOTE)
4	**6" DIVERTER LINE** (To Overboard)

BLOWOUT PREVENTER STACK

13⅝' 10,000 psi

ITEM	DESCRIPTION
5	**13⅝" HYDRIL ANNULAR BOP** 5000 psi Type GK H25 Trimmed
6	**13⅝" CAMERON DOUBLE BOP** 10,000 psi WP H_2S Trimmed
7	**13⅝" CAMERON SINGLE BOP** 10,000 psi WP H_2S Trimmed
8	**4 1/16" MANUAL GATE VALVE** Cameron Type "F" H_2S
9	**2 1/16" REMOTE HYDRAULIC VALVE** Cameron Type "F" 10,000 psi H_2S
10	**2 1/16" MANUAL GATE VALVE** Cameron Type "F" 10,000 psi H_2S
11	**2 1/16" CHECK VALVE** Cameron Type "R" 10,000 psi H_2S
12	**3" 10,000 psi KILL LINE** from Choke Manifold
13	**3" 10,000 psi CHOKE LINE** from choke Manifold

6" LINE

ATTACHMENT A-2

ROWAN COMPANIES, INC

CHALLENGER MINERALS INC.

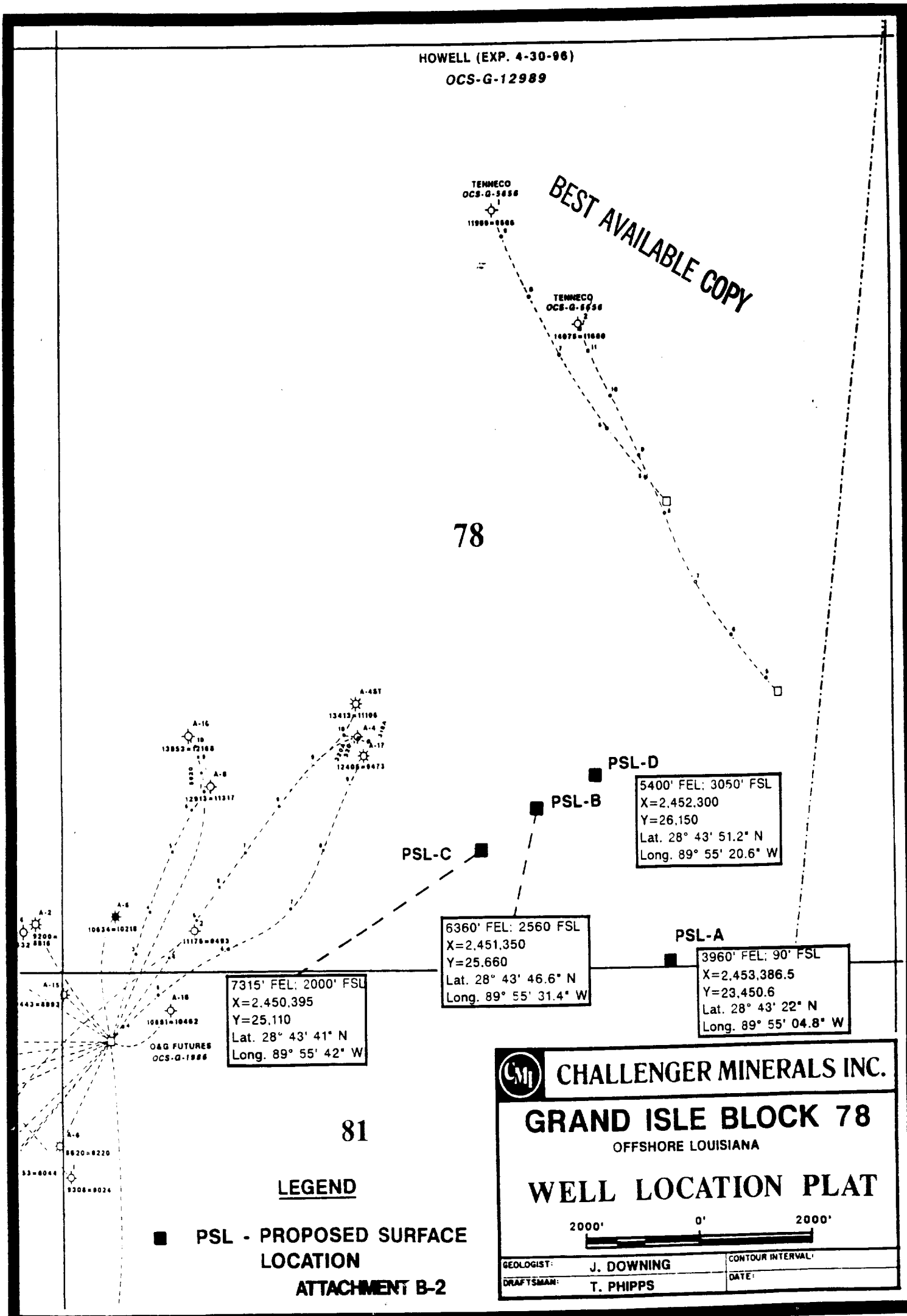
SUPPLEMENTAL PLAN OF EXPLORATION

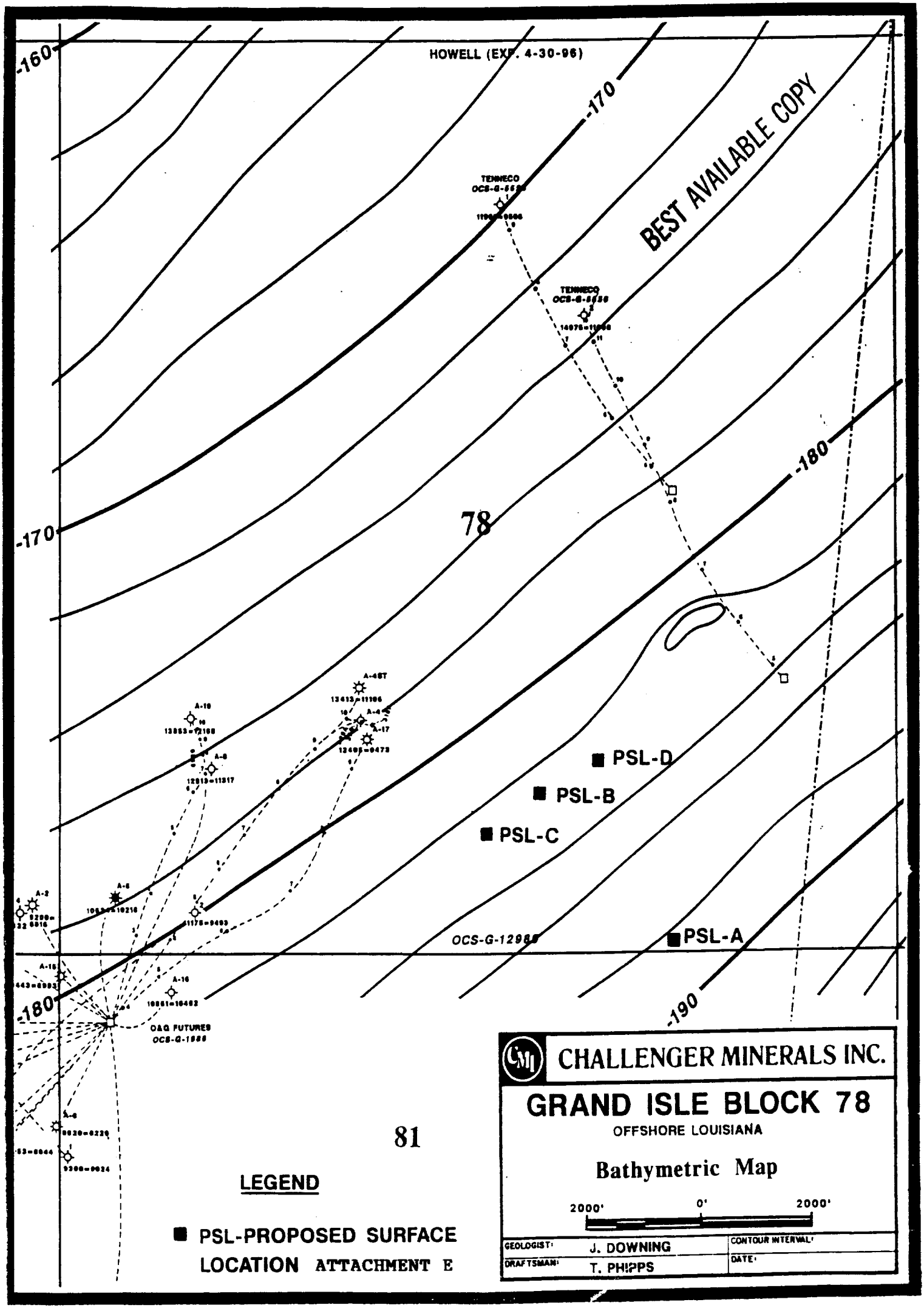
LEASE OCS-G 12989

GRAND ISLE BLOCK 78

WELL LOCATION TABLE

WELL		LOCATION	TOTAL DEPTH	WATER DEPTH	TOTAL DAYS
A	PSL:	90' FSL & 3960' FEL		188'	45
B	PSL:	2560' FSL & 6360' FEL		182'	38
C	PSL:	2000' FSL & 7315' FEL		182'	38
D	PSL:	3050' FSL & 5400' FEL		182'	38




HOWELL (EXP. 4-30-96)
-160
-170
-180
-190
BEST AVAILABLE COPY
TENNECO
OCS-G-5556
TENNECO
OCS-G-5556
78
PSL-D
PSL-B
PSL-C
PSL-A
OCS-G-12966
A-4ST
13613-11196
A-10
13853-12168
A-6
12913-11317
A-17
12405-9473
A-2
A-5
10630-10210
A-16
10851-10462
O&G FUTURES
OCS-G-1988
A-6
9320-9224
LEGEND
PSL-PROPOSED SURFACE LOCATION ATTACHMENT E
81
CHALLENGER MINERALS INC.
GRAND ISLE BLOCK 78
OFFSHORE LOUISIANA
Bathymetric Map
2000'
0'
2000'
GEOLOGIST: J. DOWNING
CONTOUR INTERVAL:
DRAFTSMAN: T. PHIPPS
DATE:

DRILLING FLUID ADDITIVES
PRODUCT CROSS REFERENCE

WEIGHTING AGENTS			
MIL-BAR	BAROID	M-I BAR	API barite, 4.2 specific gravity
DENSIMIX	BARODENSE	FER-OX	Macaceous hematite
W.O. 30	BARACARB	LO-WATE	Calcium carbonate
VISCOSIFIERS			
MILGEL	AQUAGEL	M-I GEL	API-grade Wyoming bentonite
MILGEL NT	AQUAGEL GOLD SEAL		Untreated Wyoming bentonite
SALTWATER GEL	ZEOGEL	SALT GEL	API-grade attapulgite
SUPER-COL	QUIK-GEL	KWIK-THIK	High-yield bentonite, treated
NEW-VIS			Organic polymer blend
XCD POLYMER	XCD POLYMER	XCD POLYMER	XC Dispersable
MIL-BEN	SHUR-GEL		Bentonite-OCMA Spec. DFCP4
DEFLOCCULANTS			
MIL-TEMP	THERMA-THIN DP	MELANEX-T	High-temperature deflocculant
NEW-THIN	THERMA-THIN	TACKLE (Liquid)	Polymeric deflocculant
UNI-CAL	Q-BROXIN	SPERSENE	Chrome lignosulfonate
UNI-CAL CF	Q-B II	SPERSENE CF	Chrome-free lignosulfonate
MIL-KEM	LIGNOX	RD 2000	Lime mud thinner
SAPP	SAPP	SAPP	Sodium acid pyrophosphate
OILFOS	BARAFOS	PHOS	Sodium tetraphosphate
MIL-THIN	THERMA-THIN	THIN X (Liquid)	Anionic copolymer thinner
FILTRATION CONTROL AGENTS			
BIO-LOSE			Modified polysacchande
CHEMTROL X	DURENEX	RESINEX	Polymer blend, high-temperature
FILTREX	BARANEX	RESINEX	Polyanionic lignin resin
LIGCO	CARBONOX	TANNATHIN	Lignite
LIGCON	CC-16	CAUSTILIG	Causticized lignite
MILSTARCH	IMPERMEX	MY-LO-GEL	Pregelatinized starch
NEW-TROL	POLYAC	SP-101	Sodium polyacrylate
PERMA-LOSE HT	DEXTRID	POLY-SAL	Nonfermenting starch, high-temp.
PYRO-TROL	THERMA-CHEK	POLY RX	Polymeric, high-temperature
KEM-SEAL	THERMA-CHEK		Copolymer, high-temperature
MIL-PAC	PAC R	POLYPAC	Polyanionic cellulose
MIL-PAC LV	PAC L	POLYPAC	Low-viscosity polyanionic cellulose
MILPARK CMC HV	CELLEX (High Vis)	CMC HV	Sodium carboxymethycellulose
MILPARK CMC LV	CELLEX	CMC LV	Sodium carboxymethycellulose
CORROSION CONTROL CHEMICALS			
MIL-GARD	NO-SULF	SULF-X	Basic zinc carbonate
MIL-GARD R	BARASCAV-L	SULF-X ES	Chelated zinc
NOXYGEN	COAT-888 BARACOR 113	OXYGEN SCAVENGER	Oxygen scavenger
SCALE-BAN	SURFLO-H35 BARACOR 129	SI-1000	Scale inhibitor
AMI-TEC	BARA FILM BARACOR 300 COAT-B1400 COAT-C1815	CONQOR 202 CONQOR 101 CONQOR 303	Film-forming amine
CARBO-DRILL OIL MUD ADDITIVES			
CARBO-MUL	INVERMUL NT VERSACOAT	VERSAWET	Emulsifier (and wetting agent) primarily
CARBO-MUL HT	EZ MUL NT		High-temperature emulsifier and wetting agent
CARBO-TEC	INVERMUL	VERSAMUL	Emulsifier
CARBO-GEL	GELTONE II	VERSAGEL	Organophilic clay nectonte
CARBO-VIS	GELTONE II	VERSAMOD	Organophilic clay
CARBO-TROL		VERSATROL	Filtration control agent
CARBO-TROL A-9	DURATONE HT	VERSALIG	Nonasphaltic filtration control, high-temperature
SURF-COTE	DRILTREAT or OMC	VERSAWET	Oil wetting agent for oil muds
CARBO-MIX	DRILTREAT		Nonionic emulsifier, high-activity
CARBO-TEC HW			HW oil mud emulsifier

ATTACHMENT G

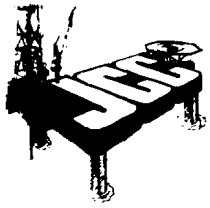
DRILLING FLUID ADDITIVES
PRODUCT CROSS REFERENCE

[illegible]	[illegible]	[illegible]	DESCRIPTION
SHALE CONTROL ADDITIVES			
ALPLEX			Aluminum complex
BIO-DRILL 1402			Oil mud alternative
NEW-DRILL	EZ MUD	POLY-PLUS	PHPA liquid
NEW-DRILL HP			Powdered PHPA
NEW-DRILL PLUS	EZ MUD DP		Powdered PHPA
SHALE-BOND	SHALE-BAN	HOLECOAT	Resinous shale stabilizer
PROTECTOMAGIC			Oil-soluble blown asphalt
PROTECTOMAGIC M	AK-70	STABIL-HOLE	Water-dispersants. Blown asphalt
SPOTTING FLUIDS			
BLACK MAGIC			Oil-base spotting fluid
BLACK MAGIC LT	EX SPOT		Low toxicity oil-base spotting fluid
BLACK MAGIC SFT		OIL-FAZE	Oil-base spotting fluid concentrate
MIL-FREE	SCOT-FREE/ ENVIRO-SPOT	PIPE-LAX	Liquid spotting fluid
BIO-SPOT	ENVIRO-SPOT		Nontoxic water-base spotting fluid
BIO-SPOT II			Nontoxic water-base spotting fluid
MIL-SPOT 2	SCOT-FREE	PIPE-LAX W	Weighted (oil-base) spotting fluid concentrate
LUBRICANTS			
AQUA-MAGIC			Low-toxicity lubricant
LUBRI-FILM	EP MUDLUBE	E.P. LUBE	Extreme-pressure lubricant
MIL-LUBE		LUBE-106	General lubricant
DETERGENTS/FOAMERS			
AMPLI-FOAM	DRILFOAM	FOAMER 80	Mist and stiff foaming agent
MIL CLEAN	BAROID RIG WASH BARA-KLEAN	KLEEN-UP	Biodegradeable detergent
MILPARK MD	CON-DET	DD	Drilling detergent
DEFOAMING AGENTS			
LD-8	BARA DEFOAM	DEFOAM-X	Hydrocarbon-base defoamer
W.O. DEFOAM	BARA BRINE DEFOAM	DEFOAM-A	Alcohol-base, saltwater muds
ALUMINUM STEARATE	Aluminum Stearate	Aluminum Stearate	Aluminum Stearate
LOST-CIRCULATION MATERIALS			
CHEK-LOSS			Seepage loss control differential sticking preventative
MIL-CEDAR FIBER	PLUG-GIT	M-I CEDAR FIBER	Cedar fiber
MIL-FIBER	FIBERTEX	M-I FIBER	Fiber blend
MILFLAKE	JELFLAKE	FLAKE	Shredded cellophane flake
MILMICA	MICATEX	MICA	(Muscovite) mica graded
MIL-PLUG		NUT PLUG	Ground pecan shells
MIL-SEAL	BARO-SEAL	KWIK SEAL	Blended lost-circuaition material
COTTONSEED HULLS	Cottonseed Hulls	Cottonseed Hulls	Cottonseed Hulls
PAPER			Ground paper
WALNUT SHELLS	WALL-NUT		Ground walnut shells
MAGNE-SET			Acid-soluble cement
WORKOVER AND COMPLETION FLUID ADDITIVES			
MUD-PAC	COAT-44 & 45	CONQOR 404 X-CORE	Corrosion (packer fluid) inhibitor
BRINE-PAC	BARACOR-A		Corrosion inhibitor clean brine fluids
W.O. 21L	LIQUI-VIS	VIS-L	Liquid HEC polymer
PRESERVATIVES			
DRYOCIDE			Dry (biodegradable) biocide
X-CIDE 207	BARA B466	BACBAN II & III	Biocide

X-CIDE 207 is a registered trademark of Petrotite Corporation.
DRYOCIDE is a registered trademark of Nalco Chemical Company
XCD (in XCD POLYMER) is a registered trademark of Marck & Co., Inc.
OILFOS is a registered trademark of Monsanto Company.

AIR EMISSION CALCULATIONS

J. Connor Consulting, Inc.



AIR QUALITY REPORT

COMPANY:	**CHALLENGER MINERALS INC.**
AREA:	**GRAND ISLE AREA**
BLOCK:	**78**
LEASE:	**OCS-G 129889**
RIG:	**JACK-UP**
WELL:	**A THRU D**
LATITUDE:	**28°43'51.2"**
LONGITUDE:	**89°55'20.6"**
COMPANY CONTACT:	**SHARON L. PEREZ**
TELEPHONE NO.:	**(713) 578-3388**

REMARKS: **THE PROPOSED SUPPLEMENTAL PLAN OF EXPLORATION PROVIDES FOR THE DRILLING, COMPLETION AND TESTING OF FOUR (4) EXPLORATORY WELLS IN GRAND ISLE BLOCK 78.**

THE PROJECTED AIR EMISSIONS REPORT PROVIDES FOR THE USE OF LOW SULPHUR FUEL (0.05).

ATTACHMENT I

16225 Park Ten Place Suite 500 Houston, Texas 77084 (713) 578-3388 Fax (713) 578-8895

GULF OF MEXICO AIR EMISSION CALCULATIONS

General

This document (MMS.WK3) was prepared through the cooperative efforts of those professionals in the oil industry including the API/OOC Gulf of Mexico Air Quality Task Force, who deal with air emission issues. This document is intended to standardize the way we estimate an air emission inventory for Plans of Exploration (POE) and Development, Operations, Coordination Documents (DOCD) approved by the Minerals Management Service (MMS). It is intended to be thorough but flexible to meet the needs of different operators. This first sheet gives the basis for the emission factors used in the emission spreadsheet as well as some general instructions. This file contains 8 sheets: A,B,C,D,E,F,G,& H. A is th Instruction Sheet, B is the Title Sheet, C is the Factors Sheet, D,E,F, & G are the Emission Spreadsheets and H is the Summary Sheet. These sheets will describe and calculate emissions from an activity.

Title Sheet

The Title Sheet requires input of the company's name, area, block, OCS-G number, platform and/or well(s) in the necessary lines. This data will automatically be transferred to the spreadsheet and summary sheet.

Factor Sheet

The emission factors were compiled from the latest AP-42 references or from industry studies if no AP-42 reference was available. Factors can be revised as more data becomes available. A change to this Factor Sheet will be automatically changed in Emission Spreadsheet.

The basis for the factors is as follows:

1. NG Turbines — Fuel usage scf/hr = HP X 9.524 (10,000 btu/HP-hr / 1050 btu/scf)
2. NG Engines — Fuel usage scf/hr = HP X 7.143 (7,500 btu/HP-hr / 1050 btu/scf)
3. Diesel — Fuel usage gals/hr = HP X 0.0483 (7,000 btu/HP-hr / 145,000 btu/gal)

Emission Factors

Natural Gas Prime Movers

1. TNMOC refers to total non-methane organic carbon emissions and these can be assumed equivalent to VOC emissions.
2. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down.

Diesel-Fired Prime Movers

1. Diesel sulfur level 0.4% by wt
2. For boats use > 600 HP factors based on AP-42 Vol. II, Table II-3-3. Those figures closely match the above values. Include only the emissions from the boats within 25 mile radius of the well/platform.
3. For diesel engines <600 HP VOC emissions equal total HC emissions; for diesel engines>600 HP VOC emissions equal non-methane HC emissions.

Heaters/Boilers/Firetubes/NG-Fired

1. NG Sulfur content is 2000 grains per million cu ft
2. VOCs emissions based on total non-methane HCs

Gas Flares

1. Flare is non-smoking
2. 1050 btu/cu. ft. for NG heating value
3. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down or you may use the following formula

   H2S flared (lbs/hr) = Gas flared (cu ft/hr) X ppm H2S X 10E-06 X 34/379

   SOx emis (lbs/hr) = H2S flared (lbs/hr) X 64/34

Liquid Flares

1. Assume 1% by wt Sulfur maximum in the crude oil.
2. VOC equals non-methane HCs
3. Particulate emissions assumes Grade 5 oil.

Tanks

1. Tank emissions assumes uncontrolled fixed roof tank.

Fugitives

1. Fugitives are based on the 1993 Star Environmental Report. It requires that you count or estimate your components.

Glycol Dehydrator Vent

1. The dehydrated gas rate in SCF/HR must be entered in the spreadsheet. The emission factor is from the compilation of the Louisiana Survey and an average emissions per gas rate.

Gas Venting

1. The emission factor is based on venting unburned natural gas of average weight.

Emissions Spreadsheet

The emissions from an operation should be presented for a calendar year (1994, 1995, etc.). The operation may include drilling only or drilling in conjunction with other activities such as pipeline installation or production operations. For the first year use sheet D, for the second year use sheet E, third use F, fourth use G and if you need more you will have to insert a sheet and copy the spreadsheet to the new sheet. The year (CELL D:A38) should be changed and the different operating parameters entered to calculate revised emissions for that subsequent year. The spreadsheet will calculate maximum fuel usage (UNIT/HR) using the known horsepower. It will assume maximum fuel usage is equal to actual fuel

(UNIT/DAY) usage unless the actual fuel usage is known. If so, insert actual fuel usage in appropriate column. The emissions will be calculated as follows:

Emission rate (lb/hr) = (HP or fuel rate) X Emission Factor (Potential to emit)

Emissions (tpy)=Emission rate (lb/hr) X load factor(Act Fuel/Max Fuel) X hrsX daysX ton/2000 lbs (Actual emissions)

To customize the spreadsheet for your application you may want to delete lines for non-applicable equipment/activities or you can input "0" for the HP of equipment that does not apply. You may also need to copy/insert an entire line if more than one similiar type of equipment is present.

Also, the production equipment can be customized further by adding the use of the equipment behind each type of engine, i.e.,

Turbine
Turbine - Gas Compressor

Burner
Burner - Line Heater

Summary Sheet

The Summary Sheet is designed to show a proposed estimate of emissions from an activity over a future period of time. In this example ten years was chosen. Each row links to the corresponding emission calculation spreadsheet for that year. For example, Row 7 of the summary corresponds to the annual totals from Sheet D. Row 8 links to the second emission calculation spreadsheet, Row 9 to the third and Row 10 to the fourth. Row 11 - 16 will carry down the emissions from the last spreadsheet with an emission rate greater than zero. The Summary Sheet will always carry down the last non-zero emission total. For example, if emission calculations are done for the years 1994 and 1995, then the the 1995 total will be carried down through the year 2003. Row 17 of the summary sheet reflects the allowable for the air quality review exemption determination. If more or less years are needed you will will have to modify the spreadsheet.

Print Instructions

The table below lists macros that were written to print sheets A, C, D, E, F, G, & H.

\A - This macro prints 3 pages of instructions (sheet A).
\C - This macro prints the emissions factors sheet (sheet C).
\D - This macro prints the emissions calculations sheet (sheet D).
\E - This macro prints the emissions calculations sheet (sheet E).
\F - This macro prints the emissions calculations sheet (sheet F).
\G - This macro prints the emissions calculations sheet (sheet G).
\H - This macro prints the emissions calculations sheet (sheet H).
\X - This macro prints all sheets - A, C, D, E, F, G, & H.

To run one of these macros, hold down ALT and press the letter in the macro range name. For example, to run the macro \A, press ALT-a.

AIR EMISSION CALCULATIONS

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	TSP	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-2	4/93
NG 2-cycle lean	gms/hp-hr		0.00185	11	0.43	1.5	AP42 3.2-2	4/93
NG 4-cycle lean	gms/hp-hr		0.00185	12	0.72	1.6	AP42 3.2-2	4/93
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-2	4/93
Diesel Recip. < 600 hp.	gms/hp-hr	1	0.116	14	1.12	3.03	AP42 3.3-1	4/93
Diesel Recip. > 600 hp.	gms/hp-hr	0.24	0.18625	11	0.33	2.4	AP42 3.4-1	4/93
NG Heaters/Boilers/Burners	lbs/mmscf	5	0.6	140	2.8	35	AP42 1.4-1	4/93
NG Flares	lbs/mmscf		0.57	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbls	0.42	6.6	2.3	0.01	0.21	AP421.3-1	4/93
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.000025		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

AIR EMISSION CALCULATIONS

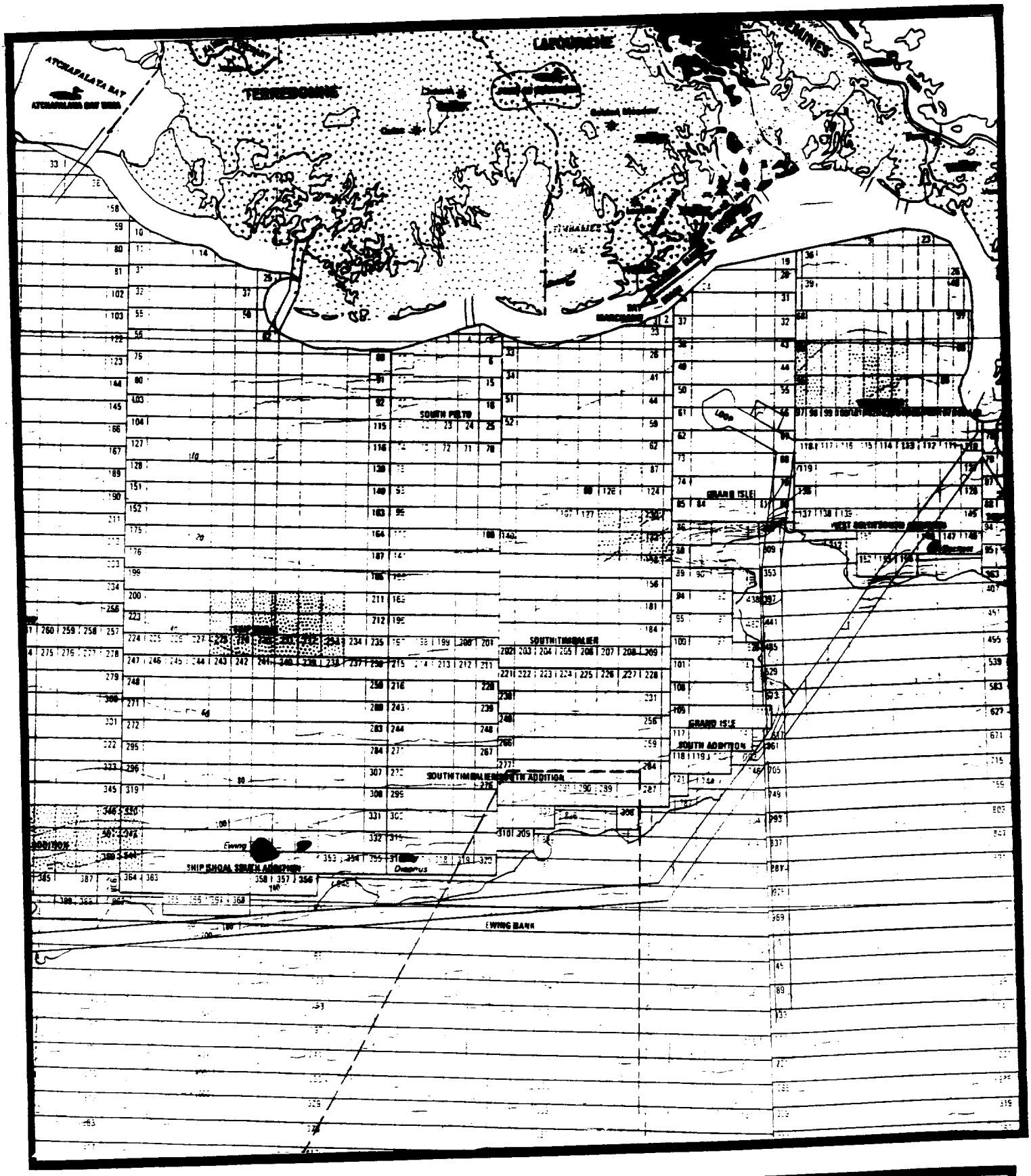
COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT	PHONE	REMARKS
CHALLENGER MINERALS IN	GRAND ISLE AREA	78	OCS-G 1298	JACK-UP	A THRU D	28°43'51.2"	89°55'20.6"	SHARON L. PEREZ	(713) 578-33	THE PROPOSED SUPPLEMENTAL PLAN OF EXPLORATION PROVIDES FOR THE

OPERATIONS	EQUIPMENT	Diesel Engines HP / Nat. Gas Engines HP / Burner MMBTU/HR	MAX. FUEL GAL/HR SCF/HR SCF/HR	ACT. FUEL GAL/D SCF/D SCF/D	RUN TIME HR/D	RUN TIME DAYS	POUNDS PER HOUR TSP	SOx	NOx	VOC	CO	TONS PER YEAR TSP	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	1000	48 30	1159 20	24	159	0 53	0.41	24.23	0.73	5.29	1.01	0.78	46.23	1.39	10.09
	PRIME MOVER>600hp diesel	1000	48.30	1159 20	24	159	0 53	0.41	24.23	0.73	5.29	1.01	0.78	46.23	1.39	10.09
	PRIME MOVER>600hp diesel	1000	48.30	1159 20	24	159	0.53	0.41	24.23	0.73	5.29	1.01	0.78	46.23	1.39	10.09
	PRIME MOVER>600hp diesel	1000	48 30	1159 20	24	159	0.53	0.41	24.23	0 73	5.29	1.01	0.78	46.23	1.39	10.09
	PRIME MOVER>600hp diesel	1000	48 30	1159 20	24	159	0 53	0.41	24.23	0.73	5.29	1.01	0.78	46.23	1.39	10.09
	AUXILIARY EQUIP<600hp diesel	1275	61 58	1477 98	24	159	2 81	0.33	39.32	3.15	8.51	5.36	0.62	75.02	6.00	16.24
	VESSELS>600hp diesel-SUPPLY	2065	99 74	2393 75	8	68	1.09	0.85	50.03	1.50	10.92	0.30	0.23	13.61	0.41	2.97
	VESSELS>600hp diesel-CREW	2065	99 74	2393 75	4	114	1.09	0.85	50.03	1.50	10.92	0.25	0.19	11.41	0.34	2.49
PIPELINE	PIPELINE LAY BARGE diesel	0	0 00	0 00	0	0	0 00	0.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	SUPPORT VESSEL diesel	0	0 00	0 00	0	0	0 00	0.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
	PIPELINE BURY BARGE diesel	0	0 00	0 00	0	0	0 00	0.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0 00	0 00	0	0	0 00	0.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	DERRICK BARGE diesel	0	0 00	0 00	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0 00	0 00
INSTALLATION	MATERIAL TUG diesel	0	0 00	0 00	0	0	0 00	0 00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	RECIP <600hp diesel	0	0 00	0 00	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0 00	0.00
	RECIP >600hp diesel	0	0 00	0 00	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0 00	0.00
	SUPPORT VESSEL diesel	0	0.00	0 00	0	0	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00
	TURBINE nat gas	0	0 00	0 00	0	0		0.00	0.00	0 00	0.00		0.00	0 00	0.00	0.00
	RECIP 2 cycle lean nat gas	0	0.00	0 00	0	0		0.00	0.00	0 00	0.00		0.00	0.00	0.00	0.00
	RECIP 4 cycle lean nat gas	0	0 00	0 00	0	0		0.00	0.00	0 00	0.00		0.00	0.00	0.00	0.00
	RECIP 4 cycle rich nat gas	0	0 00	0 00	0	0		0.00	0 00	0 00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0 00	0 00	0	0	0 00	0.00	0.00	0 00	0.00	0 00	0.00	0.00	0.00	0.00
	MISC	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0 00					0.00	
	FLARE-		0		0	0		0.00	0 00	0 00	0.00		0.00	0.00	0.00	0 00
	PROCESS VENT-		0		0	0				0 00					0.00	
	FUGITIVES-			0.0		0				0 00					0.00	
	GLYCOL STILL VENT-		0		0	0				0 00					0.00	
DRILLING	OIL BURN	150			24	2	2 63	41 25	14.38	0.06	1.31	0.06	0.99	0.35	0.00	0.03
WELL TEST	GAS FLARE		416666 667		24	2		0 24	29 75	25 13	161.88		0.01	0.71	0.60	3 89
	1996 YEAR TOTAL						10.26	45.56	304.65	34.97	219.96	11.01	5.95	332.24	14.29	76.04
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											999.00	999.00	999.00	999.00	33200.92
	30.0															

AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
CHALLENGER MINERALS INC.	GRAND ISLE ARE	78	OCS-G 129889	JACK-UP	A THRU D

Year	Emitted Substance				
	TSP	SOx	NOx	HC	CO
1996	11.01	5.95	332.24	14.29	76.04
Allowable	999.00	999.00	999.00	999.00	33200.92



30 MILES TO THE NEAREST SHORELINE AND 35 MILES TO THE SHOREBASE IS LOCATED IN GRAND ISLE, LOUISIANA

CHALLENGER MINERALS INC.

GRAND ISLE BLOCK 78

VICINITY MAP

ATTACHMENT J