

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Shell Offshore, Inc.  
Shell Mars Flotila (Mississippi Canyon 807) , Gulf of Mexico**

**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
December 9, 2005

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## **1. CONCLUSIONS**

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment. Further, there will be no restrictions of its operation due to interference considerations.

## 2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

Company

None

No carriers reported potential interference cases.

### 3. SUPPLEMENTAL SHOWING

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations.

Expedited coordination data for this earth station was e-mailed and/or faxed to the below listed carriers with a letter dated November 14, 2005. A minor revision was forwarded November 29, 2005

Company

AT&T COMM. OF THE SOUTH CENTRAL STATES  
BELLSOUTH TELECOMMUNICATIONS, INC.  
MCI Network Services, Inc.  
Stratos Offshore Services Company

## **4. EARTH STATION COORDINATION DATA**

This section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5500 <http://www.comsearch.com>

Date: 12/08/2005  
Job Number: 051129COMSJC08

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign  
Licensee Code SHLOFF  
Licensee Name Shell Offshore, Inc.

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### Site Information

**SHELL MARS FLOTILA (MISSISSIPPI CANYON 807), GULF of MEXICO**  
Venue Name OIL PLATFORM  
Latitude (NAD 83) 28° 10' 10.9" N  
Longitude (NAD 83) 89° 13' 22.1" W  
Climate Zone B  
Rain Zone 1  
Ground Elevation (AMSL) 0.0 m / 0.0 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 43° W to 140° West Longitude  
Azimuth Range 114.3° to 248.9°  
Corresponding Elevation Angles 30.1° / 26.1°  
Antenna Centerline (AGL) 31.7 m / 104.0 ft

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### Antenna Information

**Receive**  
Manufacturer Sea Tel  
Model 2.4 Meter  
Gain / Diameter 38.5 dBi / 2.4 m  
3-dB / 15-dB Beamwidth 2.04° / 3.83°

### Transmit

Sea Tel  
2.4 Meter  
41.7 dBi / 2.4 m  
1.42° / 2.65°

1M38G7W to 1M50G7W

Max Available RF Power (dBW/4 kHz)  
(dBW/MHz)

-17.7 -17.7  
6.3 6.3

Maximum EIRP (dBW/4 kHz)  
(dBW/MHz)  
(dBW)

24.0 24.0  
48.0 48.0  
49.4 49.7

Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

-154.0 dBW/4 kHz 20%  
-131.0 dBW/4 kHz 0.0025%

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### Frequency Information

Emission / Frequency Range (MHz)

#### Receive 4.0 GHz

1M38G7W - 1M50G7W / 3700.0 - 4200.0

#### Transmit 6.1 GHz

1M38G7W - 1M50G7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance 502.1 km / 312.0 mi  
Precipitation Scatter Contour Radius 566.8 km / 352.1 mi

157.9 km / 98.1 mi  
100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### SHELL MARS FLOTILA (MC 807), GM

Licensee Name Shell Offshore, Inc.  
Latitude (NAD 83) 28° 10' 10.9" N  
Longitude (NAD 83) 89° 13' 22.1" W  
Ground Elevation (AMSL) 0.0 m / 0.0 ft  
Antenna Centerline (AGL) 31.7 m / 104.0 ft  
Antenna Model Sea Tel 2.4 Meter  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -17.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	108.84	-10.00	412.20	-10.00	132.57
5	0.00	106.66	-10.00	412.20	-10.00	132.57
10	0.00	102.38	-10.00	412.20	-10.00	132.57
15	0.00	98.08	-10.00	412.20	-10.00	132.57
20	0.00	93.76	-10.00	412.20	-10.00	132.57
25	0.00	89.43	-10.00	412.20	-10.00	132.57
30	0.00	85.11	-10.00	412.20	-10.00	132.57
35	0.00	80.79	-10.00	412.20	-10.00	132.57
40	0.00	76.49	-10.00	412.20	-10.00	132.57
45	0.00	72.22	-10.00	412.20	-10.00	132.57
50	0.00	67.99	-10.00	412.20	-10.00	132.57
55	0.00	63.81	-10.00	412.20	-10.00	132.57
60	0.00	59.70	-10.00	412.20	-10.00	132.57
65	0.00	55.67	-10.00	412.20	-10.00	132.57
70	0.00	51.76	-10.00	412.20	-10.00	132.57
75	0.00	47.98	-10.00	412.20	-10.00	132.57
80	0.00	44.39	-9.18	422.48	-9.18	135.38
85	0.00	41.02	-8.33	433.52	-8.33	138.42
90	0.00	37.95	-7.48	444.71	-7.48	141.53
95	0.00	35.25	-6.68	455.58	-6.68	144.58
100	0.00	33.02	-5.97	464.82	-5.97	147.37
105	0.00	31.35	-5.41	472.77	-5.41	149.50
110	0.00	30.35	-5.05	477.85	-5.05	150.95
115	0.00	30.07	-4.95	479.28	-4.95	151.36
120	0.00	30.54	-5.12	476.84	-5.12	150.66
125	0.00	31.73	-5.54	470.92	-5.54	148.97
130	0.00	33.55	-6.14	462.99	-6.14	146.67
135	0.00	35.92	-6.88	452.79	-6.88	143.80
140	0.00	38.73	-7.70	441.77	-7.70	140.71
145	0.00	41.88	-8.55	430.59	-8.55	137.61
150	0.00	45.28	-9.40	419.74	-9.40	134.63
155	0.00	48.50	-10.00	412.20	-10.00	132.57
160	0.00	51.35	-10.00	412.20	-10.00	132.57
165	0.00	53.75	-10.00	412.20	-10.00	132.57
170	0.00	55.58	-10.00	412.20	-10.00	132.57
175	0.00	56.73	-10.00	412.20	-10.00	132.57
180	0.00	57.12	-10.00	412.20	-10.00	132.57



# COMSEARCH

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### Coordination Values

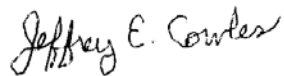
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Licensee Name	Shell Offshore, Inc.			
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Antenna Centerline (AGL)	31.7 m / 104.0 ft			
Antenna Model	Sea Tel 2.4 Meter			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-17.7 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	56.73	-10.00	412.20	-10.00	132.57
190	0.00	55.58	-10.00	412.20	-10.00	132.57
195	0.00	53.75	-10.00	412.20	-10.00	132.57
200	0.00	51.35	-10.00	412.20	-10.00	132.57
205	0.00	48.50	-10.00	412.20	-10.00	132.57
210	0.00	45.28	-9.40	419.73	-9.40	134.63
215	0.00	41.79	-8.53	430.91	-8.53	137.70
220	0.00	38.17	-7.54	443.88	-7.54	141.30
225	0.00	34.81	-6.54	457.47	-6.54	145.11
230	0.00	31.82	-5.57	470.46	-5.57	148.84
235	0.00	29.33	-4.68	483.23	-4.68	152.48
240	0.00	27.46	-3.97	493.79	-3.97	155.51
245	0.00	26.35	-3.52	500.52	-3.52	157.45
250	0.00	26.09	-3.41	502.10	-3.41	157.91
255	0.00	26.72	-3.67	498.19	-3.67	156.78
260	0.00	28.17	-4.25	489.62	-4.25	154.31
265	0.00	30.33	-5.05	477.92	-5.05	150.97
270	0.00	33.05	-5.98	464.65	-5.98	147.32
275	0.00	36.21	-6.97	451.58	-6.97	143.46
280	0.00	39.71	-7.97	438.18	-7.97	139.71
285	0.00	43.45	-8.95	425.45	-8.95	136.19
290	0.00	47.38	-9.89	413.57	-9.89	132.95
295	0.00	51.46	-10.00	412.20	-10.00	132.57
300	0.00	55.64	-10.00	412.20	-10.00	132.57
305	0.00	59.91	-10.00	412.20	-10.00	132.57
310	0.00	64.25	-10.00	412.20	-10.00	132.57
315	0.00	68.64	-10.00	412.20	-10.00	132.57
320	0.00	73.06	-10.00	412.20	-10.00	132.57
325	0.00	77.52	-10.00	412.20	-10.00	132.57
330	0.00	81.99	-10.00	412.20	-10.00	132.57
335	0.00	86.48	-10.00	412.20	-10.00	132.57
340	0.00	90.97	-10.00	412.20	-10.00	132.57
345	0.00	95.46	-10.00	412.20	-10.00	132.57
350	0.00	99.94	-10.00	412.20	-10.00	132.57
355	0.00	104.40	-10.00	412.20	-10.00	132.57

## 5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Jeffrey E. Cowles  
Principal Frequency Planner  
COMSEARCH  
19700 Janelia Farm Blvd.  
Ashburn, Va 20147

DATED: December 9, 2005