LEGEND for 2004–2015Q1 NRC Reports & OWOC observations of surface oil sheen at GoM MC20, excerpted and organized by On Wings Of Care, Inc. 2015 ("OWOC") © OnWingsOfCare.org

PO Box 24228 New Orleans, LA 70184-4228 Tele: 626-383-1412 Email: Bonny@OnWingsOfCare.og

## OWOC Flight Observations of MC20 are published at <a href="OnWingsOfCare.org">OnWingsOfCare.org</a>.

See those articles for photos, videos, GPS flight tracks, and flight logs for these and other of OWOC aerial observations of the Gulf of Mexico, since late April 2010.

No.	Subject	Comment
	1 General	All NRC reports refer to this as a "Platform incident" (MC20A), N28°56'10", W88°58'08".  Column headings and entries are abbreviated herein, and repetitious info (such as Responsible Party and Location, which are always Taylor Energy Co and Mississippi Canyon 20) is omitted; all information is substantively identical to that in the original NRC reports, which can be viewed online here: <a href="http://www.nrc.uscg.mil/">http://www.nrc.uscg.mil/</a> . OWOC gratefully acknowledges the assistance of Ms. Trisha James of Navarre, FL in extracting data from the NRC reports for these analyses.
	2 Sea Conditions	Wave Condition: 0: Calm; 1: Smooth (< 1 ft); 2: Slight (1—3 ft); 3: Moderate (3—5 ft); 4: Rough (5—8 ft); 5: Very Rough (8—12 ft) Current speed is omitted here. It has been entered by an observer only once in 2015Q1 (5 its on 20150115) and fewer than 10 times total since 2005. Wind speed is given in the NRC Reports variably in units of KTS or MPH on the few reports where it is noted at all. Units of knots (kts, 1 nautical mile per hour, or about 1.15 mph) are used here.
	3 Sheen Appearance	Sheen Color & Additional Info are verbatim from the NRC reports but are consolidated in these spreadsheets, whereas in the NRC reports this information appears randomly in either the Incident Commons spreadsheet or various columns of the Incident Details spreadsheet, if it appears at all.
	4 Sheen Length & Width	Length and width of the sheen are cited in the NRC reports with variable units of "miles" or "feet", and occasionally (as in OWOC observations) meters. The Taylor reports do not state explicitly whether "miles" means statute miles (sm) or nautical miles (nm or NM), although we might assume that where they state wind in mph (kts), they cite sheen dimensions in units of sm (nm). Here we assume that "miles" means nm, and we use the conversions: 1 nm = 6,076 ft = 1.85 km ~ 1.15 sm. It is obvious by the entry value whether NM or FT are intended, so we omit explicit mention of the units here.
	5 Sheen Area	For sheen area (product of Sheen Length and Width), we use units of acres, where 1 acre = 43,560 sq ft (~ 1 nm x 7.2 ft.) (Metric units would be easier all around, since 1 cu m = 1 micron X 1 sq km, but)
	6 Amount of Material	The unit for "Amount of material" is US gallons. We write "0" where the NRC Report lists "0" or "0-U" or "Unknown Amount."  Only the Taylor-provided NRC Reports provide estimated Amounts of Material. But the Taylor reports give no information about what assumptions are used to arrive at those estimated amounts.  Amount of Material is not a quantity that can be observed directly; it must be estimated by multiplying sheen area with sheen thickness. In aerial observations, sheen thickness can only be estimated approximately, based on appearance of the sheen, and the accuracy depends critically on the thickness itself. See below.  The estimated Amount of Material, or Volume (in US gallons), is the product of sheen area and estimated sheen thickness, by the relation:  Amt (gal) = 1.069 X Area (acres) X Thickness (microns).



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No.	Subject	Comment
7	Sheen thickness and Bonn (BAOAC) guidelines	For dull, metallic, or dark sheen — typically thicker than a few microns, visible observation cannot distinguish thicknesses more than a few microns, so only a minimum thickness can be estimated. For colored or "rainbow" sheen, the thickness is in the range of visible light wavelengths (0.3—5.0 micron), since the colored appearance is caused by thin-film interference (e.g., light reflected from the bottom of the sheen interfering coherently with light reflected from the upper surface). (Now you see why metric units for the sheen dimensions would have simplified the arithmetic of calculating sheen volumes!) For sheen that appears very light gray or "barely discernible", the thickness must usually be in the range of 0.04—0.1 micron, and as it becomes more silvery it is typically 0.2—0.3 micron.  An international standard, adopted formally by NOAA and the U.S. Coast Guard in 2006, is the "Bonn" or "BAOAC" (Bonn Agreement Oil Appearance Code) standard, which uses the following ranges and nominal values for correlating sheen appearance in aerial observations with estimated sheen thickness. These guidelines are stipulated in the Coast Guard's handbook "Open Water Oil Identification Job Aid for aerial observation" (OWJA 2012, revised from 2007), which is used for Coast Guard training. (Mysteriously, these guidelines appear never to have been used for the Taylor estimates of Amount of Material in the NRC reports.)  Silver/Gray: 0.04—0.3 micron (NOMINAL Barely Discernible or Gray = 0.1; Silvery = 0.2.)  Rainbow: 0.3—5.0 micron (NOMINAL: Faint Colors = 0.5; Rainbow or Brightly Colored = 1.0)  (NOMINAL: Dull = 3.0; Dark = 10.0)  Transitional Dark: 50—200 micron (NOMINAL: Pour let = 0.0)  (NOMINAL: Very Dark = 200 micron)  Emulsion (water in oil): > 1 mm (brown/orange) (NOMINAL: Emulsion = 500 micron)
8	Bonn-estimated Amounts of Material	Emulsion (water in oil): >1 mm (brown/orange) (NOMINAL: Emulsion = 500 micron)  Where we cite "B-Amt" we mean the Amount of Material estimated using the Bonn or BAOAC guidelines noted above.  All NRC reports submitted by NOAA, OWOC, or other entities not representing Taylor Energy show "zero" or "zero-unknown" for their Amounts.  In these spreadsheets, we provide estimated Amounts of material for all NRC reports and for the 40 OWOC flight observations that were published at OnWingsOfCare.org, all based on the Bonn guidelines.  We also provide a "corrected estimate" for the Amounts of material given in the Taylor Energy NRC reports, which we abbreviate by "B-Tay" or "B-NRC" and "Tay" or "NRC", respectively, when referring to Amounts of Material.
9	Equivalent Average Thickness (EAT)	The Taylor Energy NRC reports give no information about what thicknesses were assumed or other assumptions that went into their estimates of Amount of Material. It is straightforward and instructive to infer from their estimates an equivalent average thickness ("NEAT" for NRC Equivalent Average Thickness) by dividing the estimated Amount of Material by the observed sheen area, using the arithmetic conversion: NEAT (micron) = Amt of Material (gal) / Area of Sheen (acres) / 1.069.  ==> We find that the NEAT values that follow from the Taylor NRC reports are, for a majority of the reports, smaller than 0.04 micron — the very minimum thickness for "barely discernible" sheen according to the Bonn guidelines. 0.04 micron is 40 nanometers, or the diameter of a few tens of petroleum molecules; a typical human hair has a diameter of 10—100 microns. Considering that close to 100% of the observations by OWOC's 40 documented flyovers found considerable amounts of rainbow and darker sheen, the assumptions used by Taylor Energy to estimate their Amounts of Material are quite suspect.
		NRC reports submitted by the NOAA/NESDIS satellite information service (highlighted in gray in these spreadsheets) give detailed information about observed sheen area, but they are not able to determine accurately whether the sheen observed is light gray, silvery, rainbow, or darker. In estimating Amounts of Material associated with the NOAA satellite observation reports, we decided to be very conservative i.e., to give what can be considered a <i>minimum</i> estimate of the Amount of Material, by using a NEAT of 0.1 micron, equivalent to sheen that is light gray or barely discernible. Still, the large areas noted by the NOAA satellite observations tend to give higher estimates for Amount of Material even than the Bonn-estimated amounts from the Taylor, OWOC, and other observations. That is unnerving, and it should be, for it could well mean that we have all under-estimate the amount of pollution and how far it has spread.

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No.	Subject	Comment
10	Our conclusions about Total Amounts of Material	In order to make consistent estimates of material, based on all NRC report data and other documented observations (including revision of the Taylor estimates based on the Taylor-provided data in the NRC reports), we use the Bonn guidelines to assign sheen thickness to the areas and percent coverages for the different sheen appearances provided. Those assumptions are given in the column labeled "Assumptions." We use the nominal values noted above from the Bonn ranges, and for all of the NRC reports and other observations, there were only a few instances where we assigned a thickness greater than 1.0 (rainbow), and those for small areas specifically noted by Taylor to be dark brown. Thus, we consider our estimates of Amounts of material to be conservatively low.  Our Bonn-estimated Amounts of Material are on average (analyzed for all reports from 2004 through first quarter of 2015) 15 times larger than the estimates provided in the Taylor NRC reports. This means that, if the sheen areas in the Taylor reports are not under-estimated, the total amount of pollution in MC20 since late 2004 is 15 times more than Taylor has purported it to be. Unfortunately, reports from non-Taylor entities, which began increasing in number since 2011 when OWOC began making regular observations and in 2012 when NOAA began making satellite reports, suggest a tendency toward larger sheen areas than those reported by Taylor. From all data, and even de-emphasizing the large sheen areas suggested by the NOAA satellite data, OWOC estimates that the total oil represented by sheen in MC20 since late 2004 exceeds that reported by Taylor by a factor of 27. (The NOAA data alone, even assuming a sheen thickness no greater than 0.1 micron, would imply that this factor is 77, three times larger still than OWOC's estimate!)
11	Anomalies in the Taylor Energy NRC Reports	Anomalies in the Taylor Energy NRC reports are numerous, adding to questions about their accuracy, and for which we had to make some adjustments. For example:  — Some Taylor reports provide no sheen appearance description at all, or no sheen dimensions, or both (!), and yet the reports provide non-zero estimates for Amounts of Material for that day's observation. To provide Bonn-corrections for those taylor estimates, we use the sheen appearance descriptions or sizes from other observations made on the same day by OWOC or from Taylor observations on the days immediately before or after, or if those would produce an anomalously large correction, then we just multiply the Taylor estimate by a factor of 15. (We are choosing to err on the side of a minimal correction to the Taylor estimates, which may turn out to cause under-estimation, but we prefer to stay close to the average correction factors deduced from well documented observations by OWOC and other independent entities on the same days as the Taylor reports)  — The Amounts of Material estimates from Taylor are cited to two and sometimes FOUR decimal places — i.e., they represent a precision of 0.0001 —0.01 gal, or between 8-hundredths of a teaspoon and 2.5 Tablespoons. This level of precision is indefensible and nonsensical both mathematically and practically, for observations made at 500-1000' above the sheen from aircraft moving at 100-150 kts.  For example: On 2010 December 31, Taylor reported a sheen covering 2,178 sq ft and estimated an Amount of material of 0.0001 gal — less than one-tenth of a TEASPOON. On 2011 February 10, Taylor reported a sheen covering 7,500 sq ft which they said involved 0.0003 gal of material — less than one-quarter of a teaspoon. And yet, on 17 of the days where OWOC published photos and videos of extensive rainbow sheen, Taylor reported small amounts and the sheen as "barely discernible." Etc.  ==> We conclude that the Amounts of Material in the Taylor NRC reports are unreasonably small, primarily because of incorrect estimat

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QNOS	INCIDENT DATE TIME	WIND	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	CON- DITION LI	SHEEN SIZE: ENGTH' M or FT)	SHEEN SIZE: WIDTH' (NM or FT)	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	Mtrl	OWOC / Reported Amt of Mtrl "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	Avg	correcte R	OAA / eporte Amt of tri NAM/ AM"	d Amt o	ve E
963584	2011-01-03 10:30			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.		150	5	50	0.2	0.0014	0.02	0.1 Barely Discernible	14	0.007	0.100									$\overline{}$		4	
963697	2011-01-04 9:15			RAINBOW		NO ADDITIONAL INFORMATION.		9.5	4	1.5	36,231	2,007.0	38,731	Rainbow 1.0	19	0.052	1.000												Т
963801	2011-01-05 10:35	16	sw	SILVERY		NO ADDITIONAL INFORMATION.		3	3	300	126	2.1	27	,	13	0.016	0.200												Т
964001	2011-01-07 9:00			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.		2.7		5	1.144	13.0	122			0.011	0.100												T
	2011-01-08 9:15			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.		0.7		200	20	0.3				0.016													1
34065	2011-01-06 9:15			DISCERNIBLE		CALLER HAD NO ADDITIONAL		0.7	2	200	20	0.3						'											+
4183	2011-01-10 12:20			SILVERY		INFORMATION.	S	1.6	.5	5	678	12.6	145	5	12	0.017	0.200						_4						+
				BARELY		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD																							
4352	2011-01-12 9:00			DISCERNIBLE BARFLY		(USCG).	N	1	2	200	28	0.1		8	31	0.003	0.100	1											4
64722	2011-01-14 9:45			DISCERNIBLE		INFORMATION.		2	5	50	14	0.1	1	1	17	0.006	0.100					-							4
				RARFIY		NOTIFY THE UNITED STATES COAST GUARD																							
4873	2011-01-16 10:00			DISCERNIBLE		(USCG).		279	984 1	100	64	0.3	7	-	26	0.004	0.100											+	$\dashv$
				BARELY		NOTIFY THE UNITED STATES COAST GUARD (USCG).																							
4922	2011-01-17 9:30	8	NE	DISCERNIBLE		CALLER STATED THAT HE WILL		3.1	1	100	43	0.6			1	0.013	0.100												-
4929	2011-01-15 9:10	8	ESE	BARELY DISCERNIBLE		NOTIFY LOCAL COAST GUARD.		300	7	75	0.5	0.0	0.06	s		0.011	0.100												
						CALLER WILL NOTIFY THE UNITED STATES																							
5121	2011-01-19 9:00			BARELY DISCERNIBLE		COAST GUARD (USCG).		0 .3	1	100	4	0.0	0.4		15	0.007	0.100												
5407	2011-01-22 9:05			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.		2.8		4	949	13.1	101.5			0,013	0.100												
531	2011-01-24 8:55			OTHER		NO ADDITIONAL INFORMATION.		316	38 1	1000	72.7	2.8	16	Silvery 0.2		0.036	0.200												
636	2011-01-25 9:30			BARELY DISCERNIBLE		'CALLER HAD NO ADDITIONAL INFORMATION.		200	) 2	25	0.1	0.001	0,01		12	0.008	0.100												
5830	2011-01-27 9:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION PROVIDED.		3.3	3	300	138	4.0	14.5			0.027	0.100												
	2011-01-28 10:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		1.5	2	200	42	0.4	4.5		13														
						CALLER HAD NO FURTHER																							Τ
	2011-01-30 9:30			RAINBOW OTHERSHEEN DE	SCRIPTION: 40% SIL	INFORMATION.		4.7		75	49	1.7	158		92	0.033													-
	2011-02-02 9:00		NNE	BRIGHTLY COLOF BARELY		NO ADDITIONAL		5 2		25	424	0.0	308	Brightly COlored 1.0			0.680												-
	2011-02-03 10:20	18	NNE	DISCERNIBLE BARELY		INFORMATION.		1.3		500	91	2.0	9,1				0.100												-
	2011-02-05 9:45 2011-02-06 9:20			DISCERNIBLE		NONE		2.8	7	75 75	1,780	20.3	1,903	3	34		0.100 1.000												-
				SILVERY CA	LLER STATED	CALLER WILL NOTIFY THE UNITED STATES																							
6783	2011-02-07 8:35			SILVERY CA SHEEN WAS BAR 10% SILVERY.		COAST GUARD (USCG).		1.7	,		1,441	81.0	169	,	2	0.053	0.110												
						CALLER WILL NOTIFY THE																							
6879	2011-02-08 9:20			BARELY DISCERNIBLE		UNITED STATES COAST GUARD (USCG).		1.5	7	75	16	0.2	1.7	,	10	0.010	0.100												
6955	2011-02-09 9:05			BARELY DISCERNIBLE		NONE		248	316 1	100	57.0	0.9	6.1		,	0.014	0.100												
7066	2011-02-10 9:20			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		100	7	75	0.2	0.0003	0.0		61	0.002	0.100												Π
					SHEEN DESCRIPTION: 95% BARELY																								
7207	2011-02-11 10:30			OTHER	5% SILVERY.		_	200	) 1	100	0.5	0.0	0.1	ı	17	0.006	0.105												
7288	2011-02-12 9:15			BARELÝ DISCERNIBLE		NO ADDITIONAL INFORMATION.		369	96 7	75	6.4	0.0	0.7	,	27	0.004	0.100											_	_
				DADELY	4	CALLER WILL NOTIFY THE UNITED STATES COAST GUARD																							
7416	2011-02-14 9:00			BARELY DISCERNIBLE		(USCG). CALLER HAD NO	E	1.5	5	50	10	0.1	1.1		12	0.008	0.100												_
7518	2011-02-15 8:30	6	E	BARELY DISCERNIBLE		INFORMATION.	NNE	0 1.4	1	100	20	0.2	2.1			0.011	0.100												
7627	2011-02-16 8:30			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		1	5	50	7	0.1	0.7		15	0.007	0.100												
				BARELY DISCERNIBLE	THE MAJORITY OF			1.7									0.100												

See thos	e articles for p	photos, vi	excerp	ted and organiz	ed by On Wings C rvations of MC20 and flight logs for	ions of surface oil of Care, Inc. 2015 are published at <u>Care and other</u> or these and other or	© <u>OnW</u>	ingsOfCa OfCare.or	re.org	s of the G	iulf of Mexic	o, since																	
SEQNOS	INCIDENT DATE TIME	WIND SPEED	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION	SHEEN SIZE: LENGTH' (NM or FT)	SHEEN SIZE: WIDTH' (NM or FT)	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtri "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	NOAA Equiv Avg Thicknes s (micron) "NET"	NOAA / BAOAC- correcte d Amt of Mtrl "NAM/ BRAM"	Reporte	Observe d Amt of	OTHER Equiv Thicknes s (micron) "OET"
000115	2011-02-21 8:30	14	w	BARELY DISCERNIBLE		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD (USCG).				150	29	0.2	3.		13	0.008	0.10	10								D. Quan			
	2011-02-21 9:10	14		DISCERNIBLE		NO ADDITIONAL INFORMATION.			1000	300	6.9	0.1		0.1 Barely Discernible	10	0.012													
	2011-02-22 9:10	,		BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.			4224	100	9.7	0.1			14	0.007								<u> </u>					
	2011-02-25 11:00	1	WNW	BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.			1	50	9.7	0.1			14	0.007													
	2011-02-27 9:35		WINN	BARELY DISCERNIBLE		NONE			10.5	200	293	6.8				0.007													
	2011-02-27 9:30			BARELY DISCERNIBLE		NO FURTHER INFORMATION GIVEN.			2.5	200	70	0.5			14	0.007					. 🛆								
	2011-02-26 12:15			BARELY DISCERNIBLE		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD (USCG).			4.6	1.5	5.848	150.0				0.024					K								
	2011-02-20 12:13			BARELY DISCERNIBLE		CALLER HAD NO FURTHER INFORMATION.			9504	2640	576.0	27.5			2	0.045													
						CALLER WILL NOTIFY THE UNITED STATES COAST GUARD													M										
	2011-03-02 8:40			SILVERY	SHEEN HAD MULTIPLE COLORS.	(USCG).			3.2	0.5	1,356	2.0		50% BD, 50% Faint Colors0.5	21	0.024			$\land$		ľ								
	2011-03-03 8:45			BARELY DISCERNIBLE	COLORS.	NO ADDITIONAL INFORMATION.			1.5	100	1,300	1.3			21	0.014			4										
	2011-03-07 8:15			BARELY DISCERNIBLE		NO FURTHER INFORMATION GIVEN.			3	5	12.713	0.3			4.530		0.10												
969475	2011-03-08 9:45			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.			300	150	1.0	0.0	0.			0.013	0.10	10											
969615	2011-03-09 13:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION WAS PROVIDED.	E		1	400	55	0.3	5.		18	0.006	0.10	10											
969712	2011-03-10 9:30			OTHER	SHEEN DESCRIPTION: 95% BARELY VISIBLE AND 5% SILVERY.				1.5	75	16	0.1			16	0.007	0.10	15											
969811	2011-03-11 9:00			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.			2.2	150	45	0.5	4		10	0.010	0.10	10											
969908	2011-03-12 10:00	)		SILVERY		CALLER HAD NO ADDITIONAL INFORMATION. CALLER WILL			7	300	293	3.0			21	0.010	0.20	10											
	2011-03-13 10:00			BARELY DISCERNIBLE BARELY		NOTIFY SECTOR NEW ORLEANS.			4	100	56	0.6	6.		10	0.010													
970012	2011-03-14 9:35	7	SW	BARELY DISCERNIBLE		NONE ADDITIONAL CALLER WILL			2	150	42	0.05	4		93	0.001	0.10	10										$\vdash$	
970122	2011-03-15 9:30			FAINT COLORS		NOTIFY THE UNITED STATES COAST GUARD (USCG).	s		3.25	100	45	2.2	2	0.5 Faint Colors	11	0.046	0.50	10											
970257	2011-03-16 11:00			BARELY DISCERNIBLE		CALLER INTENDS TO NOTIFY THE US COAST GUARD.	SSW	4	2.6	.5	1,102	31.1	117.		4	0.026	0.10	10											
970331	2011-03-17 9:05			SILVERY		CALLER HAD NO ADDITIONAL INFORMATION.			8.5	500	593	44.8	12		3	0.071	0.20	10											
970414	2011-03-18 10:00			OTHER	SHEEN DESCRIPTION: 100% DULL WITH 15% COVERAGE.		NE		1.8	.25	381	46.6	18	B Dull 3.0	4	0.114	0.45	i0											
970681	2011-03-21 9:55			SILVERY		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD (USCG).			5.8	400	324	5.6	6	9	12	0.016	i 0.20	10											
970820	2011-03-22 10:30			BARELY DISCERNIBLE		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD (USCG).			3	300	126	2.6	i 13		52	0.019	1.00	10											
970900	2011-03-23 8:15			BARELY DISCERNIBLE		NONE ADDITIONAL.	. NE		1.8	150	38	0.2	4.		21	0.005	0.10	10											
971142	2011-03-25 10:15	5		BARELY DISCERNIBLE	7	NO ADDITIONAL INFORMATION. CALLER INTENDS TO NOTIFY THE US			15	2	25,425	161.0	2,718.		17	0.006	0.10	10											
971178	2011-03-25 15:45	5		BARELY DISCERNIBLE	7	COAST GUARD.			5	2	8,475	76.3	906.		12	0.008	0.10	10											
971287	2011-03-27 10:30		-	BARELY DISCERNIBLE		NOTIFY SECTOR NEW ORLEANS.  CALLER WILL NOTIFY THE UNITED STATES			200	100	0.5	0.0	0.0	5			0.10	10											
971416	2011-03-29 10:15			BARELY DISCERNIBLE		UNITED STATES COAST GUARD (USCG).			2.8	300	117	1.0	12.	5	13	0.008	0.10	10											



See thos	se articles for	photos, vi	excerpt	ted and organize	ed by On Wings Co vations of MC20 and flight logs for	ons of surface oil of Care, Inc. 2015 are published at C r these and other or ril 2010.	© OnW	ingsOfCare.org	of the G	ulf of Mexic	o, since																	1
SEQNOS	INCIDENT DATE TIME	WIND SPEED	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION' SIZE: LENGTH' (NM or FT)	SHEEN SIZE: WIDTH (NM or FT)	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtri "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtrl "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	NOAA Equiv Avg Thicknes s (micron) "NET"	NOAA / BAOAC- correcte d Amt of Mtrl "NAM/ BRAM"	Reporte	OTHER Sheen	OTHER OTHER Equiv d Amt of Material (GAL) "OAM"
971528	2011-03-30 11:10			SHEEN DESCRIPT BARELY VISIBLE	TION: 50% SLIGHTLY	Y COLORED 50%		1500	50	1.7	1.0		1		1 0.543	0.300												
971712	2011-04-01 8:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		5.6	200	156	0.8	16.3	,	2	0.005	0.100	,											
	2011-04-02 9:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.	NE	4.7	1	3,983	34.1	425.1		1:	2 0.008	0.100												
				RADELY		CALLER WILL NOTIFY SECTOR				5,555														$\overline{}$				
971868	2011-04-03 9:25			DISCERNIBLE BARFLY		NEW ORLEANS.	NE	5.4	1	4,577	40.5	489.2	2	10	2 0.008	0.100	0											
971939	2011-04-04 9:35			DISCERNIBLE		INFORMATION.		2.5	400	139	2.0	14.1	9		7 0.013	0.100	)											
072052	2011-04-05 9:45			BARELY DISCERNIBLE		CALLER WILL NOTIFY LOCAL COAST GUARD.		150	75	0.3	0.0	0.0		10	0.007	0.100	ļ											
972159	2011-04-06 9:30			FAINT COLORS		NONE.	SW	7	150	146	1.1			75						. 6								
972242	2011-04-07 9:20			BARELY DISCERNIBLE		NONE		3	300	126	2.1	13.4	1		0.016	0.100	o											
972381	2011-04-08 12:20	)		BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		2	100	28	0.3	3.0		10	0.010	0.100	o											
972441	2011-04-09 10:45	5		BARELY DISCERNIBLE		NONE		7	1	5,933	49.9	634.2	2	10	0.008	0.100	0											
				BARELY		CALLER WILL NOTIFY SECTOR NEW ORLEANS AND BOEM NEW ORLEANS																						
972518	2011-04-10 12:30	12	E	DISCERNIBLE		DISTRICT.	NNW	5	2	8,475	71.9	906.0		1:	0.008	0.100	0											
						THE CALLER PLANS ON CONTACTING THE																						
972585	2011-04-11 9:10			RAINBOW		USCG. THE CALLER PLANS ON MAKING		1.5	150	31	3.5	34	1.0 Rainbow	10	0.103	1.000												
	2011-04-12 8:55 2011-04-14 8:05			DISCERNIBLE		FURTHER NOTIFICATIONS.		2.9	1500	607 16.781	5.2	3.58		1:	0.008													
	2011-04-14 8:05	)		SILVERY		NONE		13.2	1.5	6,356	386.0 337.0				0.022													
						NO ADDITIONAL INFORMATION TO																						
	2011-04-15 9:30		SSW	BARELY DISCERNIBLE		REPORT.  CALLER HAD NO ADDITIONAL INFORMATION.		1.2	500	1,271	27.3	27:		11	0.020	0.200												
973214	2011-04-17 9:15			BARELY DISCERNIBLE	70% BARELY DISCERNIBLE - 30% SILVERY	CALLER WILL NOTIFY SECTOR NEW ORLEANS.		1.1	0.5	466	3.6	6:		11	0.007	0.130												
973280	2011-04-18 8:50			BARELY DISCERNIBLE		CALLER WILL NOTIFY SECTOR NEW ORLEANS.		2.5	.5	1,059	18.8	113.3			3 0.017	0.100												
973433	2011-04-19 10:10	)		BARELY DISCERNIBLE		CALLER WILL NOTIFY SECTOR NEW ORLEANS. CALLER WILL	NNE	5	75	52	0.4	5.0		11	0.007	0.100												
973533	2011-04-20 9:10			BARELY DISCERNIBLE		NOTIFY THE UNITED STATES COAST GUARD (USCG).	E	5.5	75	58	0.6	6.5		10	0.010	0.100												
	2011-04-21 9:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION		5	200	139	1.2	14.		1:	3 0.008	0.100	,											
973757	2011-04-22 9:50			BARELY DISCERNIBLE		NONE.		3.8	50	27	0.2	2		15	0.007	0.100												
	2011-04-23 9:45	15	SE	BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION. CALLER WILL		1.7	150	36	0.3	3.1	3	12														
072045	2011-04-25 9:35	15		BARELY DISCERNIBLE		NOTIFY THE UNITED STATES COAST GUARD (USCG).	Aller		100	10	0.1	1.0		10	0.010	0.100												
	2011-04-26 9:35			DIOCERIVIDEE		NO ADDITIONAL INFORMATION.		7	.5	297	1.6		0.1 Barely 2 Discernible	21														
	2011-04-28 10:45			BARELY DISCERNIBLE		NONE	7	3.1	600	259	1.0			20														
	2011-04-24 9:35			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.		4.3	75	45	0.4	4.1		12														
	2011-04-29 8:10			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION	NW	7.1	1000	990	8.1	105.1		1:														
	2011-05-28 9:20			SILVERY		CALLER HAD NO ADDITIONAL INFORMATION.		4.5	2.5	9,535	71.8	2,031		21														
981173	2011-06-29 8:45			BARELY DISCERNIBLE From OWOC fligh	t loan "A Arriving (	CALLER HAD NO ADDITIONAL INFORMATION. former) site of	SE	2.6	50	18	0.2	1.1		1:	3 0.008	0.100												
See OWOC Web Article				Ocean Seratoga W-E (tracking 10) didn't track to its the slick starts on 088°58.049'W. V 0.5-nm wide" Physheen about 20%	the oil slick: Slick magnetic), about eastward end). The the west end, gps are y obvious sheen of the total sheen of the total sheen.	very obvious, runs 10 nm at least (we re is a buoy where \$9035, 28°56.378'N, on surface, about I line of rainbow area Post-correction							40% BD, 40%															
	20110701			from photos to eff percentages as n	ective average widt oted.	h of 100 ft		10	1000		0.0		Silvery, 20% rainbow				1,395	477	0.320	11.6	3,181							



			excerpt	ed and organiz DC Flight Obse	ed by On Wings ( rvations of MC20	ions of surface oil Of Care, Inc. 2015 are published at	© OnW	ingsOfCa OfCare.o	re.org																					
See tho	se articles for	photos, vi	deos, GP	S flight tracks,	and flight logs fo	r these and other oril 2010.	of OWOC	aerial ol	servation	s of the (	Gulf of Mexic	o, since																		
SEQNOS	INCIDENT DATE TIME	WIND SPEED	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION	SHEEN SIZE: LENGTH' (NM or FT	SHEEN SIZE: WIDTH (NM or FT)		Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtr "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	NOAA Equiv Avg Thicknes s (micron) "NET"	NOAA / BAOAC- correcte d Amt of Mtrl "NAM/ BRAM"	NOAA / Reporte d Amt of Mtrl "NAM/ RAM"	OTHER	Observe d Amt of Material	OTHER Equiv Thicknes s (micron) "OET"
					SHEEN COLOR: "SLIGHTLY	CALLER WILL NOTIFY THE UNITED STATES																								
981943	2011-07-07 8:45			OTHER	"SLIGHTLY COLORED".	(USCG).			11	50	77	1.0	9 4	1 Slightly colored 0.5	4	0.012	2 0.500	0												
983142	2011-07-19 9:00			OTHER		NO ADDITIONAL INFORMATION.		0	5.2	1	4,407	52.8	94	2 0.2 Silvery	11	3 0.01	1 0.200	0												
000440	2044 00 40 40 40 20				IS REPORTING THA MAINTENANCE ON SYSTEM, A 4 INCH I DISCOVERED TO B THE CONTAINMENT AN UNKNOWN AMO GAS AND 120.43 GA DIVERS ARE WORK CONTAINMENT DOI	E DEPARTED FROM T DOME, RELEASING DUNT OF NATURAL					5.085	120.	4 54			5 0.025	2 0.100													
	2011-08-18 13:30	U				rgy (Ocean		2	3	2	5,085	120.	5 54	4		0.022	2 0.100	U												
See OWOC Web Article	20110819			from there we saw for a submersible, vessel but not obv looking oily spheri	gnly 29"N, -089"W, wi four buoys and a larg and trailing for about a lously coming from it v cal globules. "	rgy (Ocean aypoint 9110). Not far the vessel with platform a half-mile behind that was a line of strange-			2.1	0 100		0.1		Silvery 0.2				:	28	6 0.20	0.01	0.0	5							
988268	2011-09-02 9:00			SILVERY	CRUDE OIL	CALLER HAD NO ADDITIONAL INFORMATION.			1000	200	4.6	0.1		1			0.200													
	2011-09-01 9:30		SE	BARELY DISCERNIBLE		NONE	NNE		2640	30	1.8		1 0.	2	11	0.008	5 0.100	0												
988338	2011-08-31 8:40			SILVERY		NO ADDITIONAL INFORMATION. CALLER WILL			5.5	50	38	0.8	В	8	1	0.019	9 0.200	0												
988561	2011-09-06 9:00			SILVERY		NOTIFY THE UNITED STATES COAST GUARD (USCG).	s		1.9	800	212	3.1	B 4	.5	11	0.017	7 0.200													
				BARELY DISCERNIBLE		CALLER WILL NOTIFY THE UNITED STATES COAST GUARD																								
	2011-09-07 9:00	12	NE NE	DISCERNIBLE	70% BARELY VISIBLE, 25% SILVERY,	(USCG).  NO ADDITIONAL INFORMATION.			3.1	100	38	0.4		9 30% silvery	1	0.010	0.100													
988985	2011-09-09 8:15			SILVERY		CALLER HAD NO ADDITIONAL INFORMATION.			6	150	126	0.1	2	7			0.200	0												
	2011-09-10 8:15			SILVERY		NO ADDITIONAL INFORMATION.			9.5	600	795	32.				0.039														
989223	2011-09-11 8:30			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL COMMENTS.			3.6	500	251	4.3	2	7		0.016	6 0.100	0												
989310	2011-09-12 8:30	6	3	BARELY	50% BARELY VISIBLE, 30% SILVERY	CALLER WILL NOTIFY SECTOR NEW ORLEANS.			5.6	300	234	6.9		18 50% Silvery		0.026	6 0.150	0												
	2011-09-13 8:50 2011-09-14 8:45			DISCERNIBLE SILVERY		NONE NONE ADDITIONAL	. NE	0	1.7	1000	237 2,466	1,5	5 2	25	11	0.000														
989715	2011-09-15 9:00			SILVERY		NO ADDITIONAL INFORMATION.			2.5	2500	872				16															
989825	2011-09-16 8:45			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION. NO ADDITIONAL			2.8	1500	586	3:1		3	10	0.006	6 0.100	0												
989936	2011-09-17 9:50			OTHER		INFORMATION. CALLER HAD NO			3.5	3000	1,465	9.1	23	50-50 Silvery, Barely Discernible	26	0.006	6 0.150	0						-						
989997	2011-09-18 9:15			BARELY DISCERNIBLE BARELY		ADDITIONAL COMMENTS.		4	2.1	1000	293	1.3	3 3	:1	2	0.004	4 0.100	0												
Saa	2011-09-20 8:45			DISCERNIBLE	25% COVERED tracks and flight log: t	two lines, one 2 nm W			6	600	502	9.:	2 1	3		0.017	7 0.025	5												
OWOC Web Article	20110921				30% COVERAGE.	two lines, one 2 nm W- of the Combined effective prove rainbow sheen				7 300		0.0		30% Rainbow, 709 Silvery	6			29	93 13	8 0.44	3.8	3 24.	0							
990346	2011-09-21 8:35				70% BARELY VISIBLE	NOTIFY USCG SECTOR NO. NO ADDITIONAL	1		3.1	600	259	5.1	3	6 30% Silvery		0.021	1 0.130	0												
	2011-09-22 8:35			OTHER		INFORMATION.  NO ADDITIONAL INFORMATION.			4.2	400	234	5.3		0.2 Silvery	1	0.02							-					$\vdash$	$\vdash$	
990688	2011-09-24 10:30	0				INFORMATION.  CALLER WILL  NOTIFY THE  UNITED STATES  COAST GUARD			4.4	500	307	3.4	6	6 0.2 Silvery	21	0.010	0.200	0												
990749	2011-09-25 9:00			BARELY DISCERNIBLE		COAST GUARD (USCG). CALLER WILL NOTIFY THE UNITED STATES			2.6	600	218	5.1	9 2	:3		0.025	5 0.100	0												
990807	2011-09-26 8:30			BARELY DISCERNIBLE	4	UNITED STATES COAST GUARD (USCG).			6.1	150	128	1.	, ,	4	10	0.010	0 0.100	0												
990952	2011-09-27 9:00			SILVERY	20% COVERED	NONE ADDITIONAL NONE.			4	1000	558 544	18.0	5 11	9		0.03	1 0.200	0												
9910/6	2011-09-20 9:00			SEVER!	20 % COVERED	CALLER WILL NOTIFY THE UNITED STATES COAST GUARD			7.0	300	544	5.1	. 2		<u> </u>	0.010	0.040													
991162	2011-09-29 9:15			SILVERY		(USCG).			6.5	1000	907	8.	1 19	14	24	0.008	8 0.200	0		1										



See those	articles	for photos	videos,	WOC Flight Obse	ervations of MC20 , and flight logs for late Ap	are published at g r these and other ril 2010.	of OWOC	OfCare.or	rg. oservations	of the G	ulf of Mexic	o, since																	1
QNOS	INCIDE DATE T	INT WIN	D WIN D DIRE TIO	D C- SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION	SHEEN SIZE: LENGTH' (NM or FT)	SHEEN SIZE: WIDTH (NM or FT)	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected s Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtri "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	Avg		teporte OTHI Amt of Shee Area NAM (acre	OTHER Observed Amt of Materia (GAL) "OAM"	OTHEQUE Thicks (mic "OE
991282	2011-09-30	8:15				CALLER HAD NO ADDITIONAL INFORMATION.			7.2	1700	1,707	12.7		365 0.2 Silvery	21	0.007	0.20	0								BRAM"			
					CALLER DESCRIBED THE SHEEN COLOR AS "50% SILVERLY AND 50% BARELY DISCERNIBLE".																								
991437	2011-10-02	9:00		SILVERY	50% BARELY DISCERNIBLE*.	COAST GUARD (USCG). CALLER HAD NO	NNE		.6	1500	126	0.1		20	210	0.001	0.15	0										_	
991493	2011-10-03	8:55		BARELY DISCERNIBLE		ADDITIONAL COMMENTS.			1.1	800	123	0.6	3	13	2	2 0.005	0.10	0											
991665	2011-10-05	8:45		BARELY DISCERNIBLE BARELY		NO ADDITIONAL INFORMATION. NO ADDITIONAL			2.6	1000	363	2.9	•	39	1:	0.007	0.10	0										_	
	2011-10-06			DISCERNIBLE BARFLY		INFORMATION.			1.8	400	100	0.9		11	11		0.10						lacksquare					_	-
	2011-10-07			DISCERNIBLE		NONE CALLER HAD NO	E		.8	400	45	0.2	2	5 0.1 Parech	2	0.005	0.10	0										_	
	2011-10-12			BARELY		ADDITIONAL INFORMATION. NO ADDITIONAL INFORMATION.			5.4	300	226	1.2		24 Discernible	21		0.10											_	+
992434	2011-10-13	9:30		DISCERNIBLE	SHEEN	INFORMATION.		2	3.5	1000	488	4.5	5	52	12	2 0.009	0.10	0										-	
992529	2011-10-14	8:50		OTHER	DESCRIPTION: 80% BARELY VISIBLE AND 20% SILVERY				1.8	500	126	0.5	5	16	33	2 0.004	0.12												
992622	2011-10-15	9:00		BARELY DISCERNIBLE	CRUDE OIL	CALLER HAD NO ADDITIONAL INFORMATION.			2.9	1500	607	6.2	,	65	10	0.010	0.10	0											
						CALLER WILL NOTIFY THE																							
992778	2011-10-17	10:40		BARELY DISCERNIBLE		UNITED STATES COAST GUARD (USCG).			3.8	1500	795	3.0		85	21	0.004	0.10	0											
	2011-10-18				NO SHEEN INFO GIVEN	CALLER HAD NO ADDITIONAL INFORMATION.						2.3		45 x20	20														
	2011-10-18			BARELY DISCERNIBLE	GIVEN	NO ADDITIONAL INFORMATION.			2	1000	279	3.0		30 X2U	11	0.010	0.10	0											
	2011-10-22			BARELY DISCERNIBLE		NONE	Е		1.5	1000	209	2.1		22	10	0,010	0.10	0											
						CALLER WILL NOTIFY THE UNITED STATES COAST GUARD																							
993350	2011-10-23	8:30		BARELY DISCERNIBLE		COAST GUARD (USCG).			1.9	2000	530	4.5	5	57	1:	0.008	0.10	0											
	2011-10-24			BARELY DISCERNIBLE BARELY		NONE ADDITIONAL			4.7	300	197	3.7		21		0.018	0.10											_	
	2011-10-26			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.	NE		6	300	251	2.7		27	10		0.10												
	2011-10-27			RAINBOW		NONE.			27984 36.	1000	321 5,021	15.7	1,	343	131		0.20											_	+
	2011-10-20			RAINBOW		NONE			1.4	500	98	1.0		104	104		1.00												
	2011-10-31			RAINBOW		NO ADDITIONAL INFORMATION.					0	0.7		14 1	21														
994217	2011-11-01	10:00		OTHER		CALLER STATED USCG NEW ORLEANS WILL BE CALLED NEXT.			1.1	2000	307	4.9		66 0.2 Silvery	14	0.015	0.20	0											
				BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.						6.5		60															
	2011-11-02			BARELY	CRUDE OIL	CALLER HAD NO ADDITIONAL INFORMATION.			2.7	1500	900			60	1	0.011	0.10	U											
994535	2011-11-04	8:15		DISCERNIBLE		CALLER HAD NO			.7	800	78	0.7	7	8	11	0.008	0.10	0										-	+
	2011-11-05			RADELY		ADDITIONAL INFORMATION.			1.5	600	126	2.4		13 Discernible		0.018												_	
	2011-11-06			BARELY DISCERNIBLE		NONE ADDITIONAL INFORMATION.			1.3	300	54	1.5		6 0.1 Barely 63 Discernible		0.025												_	
994774	2011-11-07	8:00		DADELY		CALLER WILL NOTIFY SECTOR NEW ORLEANS.			2.1	2000	586	7.0		63 Discernible	1	0.011	0.10	0										_	+
	2011-11-08			BARELY DISCERNIBLE BARELY DISCERNIBLE		NEW ORLEANS.	WNW		2.8	1000	391	2.4		42	1		0.10											_	
	2011-11-09 2011-11-11			DISCERNIBLE		NONE NO ADDITIONAL INFORMATION.	W	2	3	50	21	0.6		2 39 x20	21	0.025	0.10	0											-
995314	2011-11-11	8:15		SILVERY		NONE			6	500	418			39 x20 89	1	0.022	0.20	0											
995380 2	2011-11-13	9:30		BARELY DISCERNIBLE	BARELY DISCERNABLE AND 15 % SILVERY.				3	1500	628	2.5	5	77	3	1 0.004	0.111	5											
						GALLER WILL NOTIFY THE UNITED STATES COAST GUARD																							
995462	2011-11-14	10:00		BARELY		(USCG).			.9	1500	188	22.5	5	20		0.112	0.10	0											
	2011-11-15			OTHER		NO ADDITIONAL INFORMATION.			.9	600	75	1.7		35 x20	21	0.021	0.43											_	
995682	2011-11-16	8:30		BARELY DISCERNIBLE		NONE ADDITIONAL	NNE		2.3	300	96	1.5	5	10		7 0.015	0.10	0											

			excerp	ted and organia	zed by On Wings (	ions of surface oil Of Care, Inc. 2015 are published at C	© OnW	ingsOfCa	re.org																					
See tho	se articles for p	photos, vi	deos, GP	S flight tracks	and flight logs fo	r these and other or oril 2010.	of OWOC	aerial ol	servation	s of the G	Gulf of Mexic	co, since																		
SEQNOS	INCIDENT DATE TIME	WIND SPEED	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION	SHEEN SIZE: LENGTH' (NM or FT	SHEEN SIZE: WIDTH' (NM or FT)	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)' "RET"	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtri "WAM/ RAM"	NOAA Sheen Area (acres)	NOAA Observe d Amt of Material (Gal) "NAM"	Avg	NOAA / BAOAC- correcte d Amt of Mtrl "NAM/ BRAM"	NOAA / Reporte d Amt of Mtri "NAM/ RAM"	OTHER Sheen Area (acres)	Observe d Amt of	OTHER Equiv Thicknes s (micron) "OET"
				BARELY		CALLER HAD NO ADDITIONAL																				D. Crain				
995928	2011-11-18 8:50			DISCERNIBLE	CRUDE OIL	INFORMATION.  FYI CALLED IN AT 1243 HOURS EST.			3.2	400	179	3.2	2 1	9		0.017	0.10	0										_		
						1243 HOURS EST. DUE TO SYSTEM ISSUES THE INCIDENT WAS NOT ENTERED. ONCE THE SYSTEM RETURNED BACK ONLINE THIS INCIDENT WAS ENTERED	1																							
996138	2011-11-21 10:00	)				CALLER HAD NO			1.2	600	100	1.2	2 2	1 0.2 Silvery	17	0.011	0.20	0												
996242	2011-11-22 10:00	)		SILVERY		ADDITIONAL COMMENTS. CALLER HAD NO			2	2000	558	6.7	11	9	18	0.011	0.20	0												
996365	2011-11-23 10:00					ADDITIONAL INFORMATION.			3	1000	418	3.9	88	9 0.2 Silvery	2:	0.009	0.20	0												
	2011-11-25 10:00			SILVERY		CALLER HAD NO ADDITIONAL INFORMATION.			2.3	1000	321	1.3	3 6	9	5	0.004	0.20	0												
	2011-11-26 10:00			BARELY DISCERNIBLE		NO ADDITIONAL INFORMATION.			1.1	1000	153				2:			_												
	2011-11-27 11:00			DIOOCITATION	CHEEN	IN GRADUTOR.			1.8	500	126				24			0												
	2011-11-28 9:50				DESCRIPTION: 55% BARELY DISCERNIBLE, 30% SILVERY, 15% SLIGHTLY COLORED	NO ADDITIONAL INFORMATION.			1.1	500	77	0.4					0.19													
	2011-11-28 9:50				SHEEN WAS 80% BARELY VISIBLE AND 20% SILVERY.				1.6	600	134	1.5		7	1	0.005	0.19		1											
996824	2011-11-30 10:15	5		BARELY DISCERNIBLE	CRUDE OIL	CALLER HAD NO ADDITIONAL INFORMATION.			1.5	300	63	0.4		7	16	0.006	0.10													
000000	2044 42 04 0-25			BARELY DISCERNIBLE		CORRECTION TO NRC REPORT 996916				300	167		1		2	0.005	0.10													
	2011-12-01 9:35			SHEEN WAS 50°	6 BARELY DISCERNA	BLE AND 50%			3.5	500	244	0.9			11		0.15	-												
	2011-12-03 9:00					CALLER HAD NO ADDITIONAL INFORMATION.				600	59	0.5		3 Silvery 0.2		0.008														
	2011-12-04 8:35			BARELY DISCERNIBLE		NONE ADDITIONAL.			1.1	400	61	0.9		7	4	0.014														
	2011-12-05 9:15			BARELY DISCERNIBLE		NONE ADDITIONAL.	ssw		.7	800	78			8																
997536	2011-12-08 8:30			BARELY DISCERNIBLE		CALLER HAD NO ADDITIONAL INFORMATION.			4.1	1000	572	18.9	e de la companya de l			0.031	0.10	0												
See OWOC Web Article	20111209			Energy site repor E by ~1000-1500 large white cylind	ted previously): What a ft wide. One ship work irical float. (Couldn't re- otos & videos: Vessel w	a mess! ~3 nm long W- king there, towing a ad name, blue and				3 0.25		0.00		Rainbow ~30% of the sheen,70%				63	5 299	0.440	50.1	89.								
				RARFLY		CALLER HAD NO ADDITIONAL				0.20									200	0.440	00.1	00.								
997754	2011-12-10 9:00			DISCERNIBLE	CRUDE OIL	INFORMATION.  NO ADDITIONAL INFORMATION WAS	SW		.8	500	58	3.3		6	:	0.056	0.10	0												_
997995	2011-12-13 11:30	)		BARELY DISCERNIBLE		PROVIDED.  NO ADDITIONAL	SSW	4	2.3	200	64	1.4		7		0.021	0.10	0												
998088	2011-12-14 10:15	5		BARELY		INFORMATION.			1.2	600	100	0.9	2	1 Silvery 0.2	2	0.009	0.20	0												
	2011-12-15 8:30			DISCERNIBLE BARFLY		NONE			1	300	42	0.2		4	2	0.005														
	2011-12-17 10:45	5		DISCERNIBLE BARELY	CALLER WILL NOTI	NONE FY THE UNITED			3.9	400	218	3.9				0.017													-	
	2011-12-18 8:45			DISCERNIBLE SHEEN COLOR:	STATES COAST GU 80% BARELY VISIBLE PRED-5% BRIGHTLY C	ARD (USCG). -10%SILVERY-5%			6.5	1000	907	6.5			11	0.007														
998459	2011-12-19 8:15			Sheen. Line W-E	, ~1.5 nm long, 10 m wi	ide (N-S). Some deep			6.2	500	432	4.7	8	1	17	0.010	0.17	5												
See DWOC Neb Article	20111220			of many streamer and reddish-brow (Summing 1 nm of coverage of 2.0,	eathered lines and patcles, and some large patchers, and some large pat	ide (N-S). Some deep hes. Long lines - 2 nm thes. Bainbow, metallic; a and Amt of Material: 2 nm x 1 nm, 20% sums to effective total ment below.				2 1		0.0		Effective 30% coverage at 1.0				1,69	5 544	0.300	2.9	57.:	3							
	2011-12-20 9:00					NO ADDITIONAL INFORMATION.			4.2	1000	586	9.5	19	0 x20	21	0.015	0.30													
	2011-12-23 9:00			SILVERY		NONE NO ADDITIONAL	WSW		3	1000	418		8	9	11															
	2011-12-24 9:00		-	DISCERNIBLE	CALLER WILL NOTI STATES COAST GU	NO ADDITIONAL INFORMATION. FY THE UNITED			2.2	15	5	4.1	-	-	-	0.000		-												
	2011-12-28 8:45			DISCERNIBLE BARELY DISCERNIBLE	STATES COAST GU				1.8	400	100			1	10	0.010														
	2011-12-27 9:00			BARELY		NONE			1.3	100	18	0.0		2			0.10	-					-							
999199	2011-12-29 8:45			DISCERNIBLE		NONE.			3.7	800	413	3.7	4	4	10	0.008	0.10	0												



See thos	se articles for	photos, vic	excerp	ted and organiz	OWOC observati ed by On Wings C rvations of MC20 and flight logs for late Ap	of Care, Inc. 2015 are published at	© OnW	ingsOfCa OfCare.or	re.org	s of the G	ulf of Mexic	o, since																	
SEQNOS	INCIDENT DATE TIME	WIND SPEED	WIND DIREC- TION	SHEEN COLOR	SHEEN-ODOR DESCRIPTION & SHEEN ADDITIONAL INFO		DIREC- TION OF SHEEN TRAVEL	WAVE CON- DITION	SHEEN SIZE: LENGTH' (NM or FT	MIDTH:	Reported Sheen Area (acres)*	Reported Amt of Material (Gal) "RAM"	BAOAC- Estimated Amt of Material' (Gal) "BRAM)	Assumptions (BAOAC thicknesses for NRC data, etc.)	Ratio of Corrected / Reported Amt of Mtrl "BRAM / RAM"	Reported Equiv Avg Thickness (micron)*	BAOAC- Corrected Equiv Avg Thickness (micron) "BRET"	OWOC Sheen Area (acres)	WOC Observed Amt of Material (Gal) "WAM"	OWOC Equiv Thickness (micron) "WET"	OWOC / BAOAC- corrected Amt of Mtrl "WAM/ BRAM"	OWOC / Reported Amt of Mtr "WAM/ RAM"	NOAA Sheen Area (acres)	Observe d Amt of Material (Gal)	Equiv Avg Thicknes micron)	Int of M Itrl NAM/ R	Reporte Of Shart	THER O	THER OTHER Equal Thick is atterial state of the company of the com
	20111230			Start of a long line white buoy with a 17 nm, is about 0.5 cm of 17 nm, is about 0.5 cm of 18 nm of 18	142 CST, N28 55 984 1 1207] Platform, says in m less than a half-mile size CST, N28 52 559 1 13021] 1505 CST, N28 52 559 1 1506 CST, N28 53 329 1 1506 CST, N28 57 160 Wi 1320] 1506 CST, N28 57 160 Wi 1506 CST, N28 57 160 Wi 1507 CST	ic orange float and subtendes eastward about subtendes eastward about the east (mear eoc) e)			2.1	3 150 600	176	0.6 1.6	) 5 1	10% rainbow. 40% silvery, 50% BD	12	Book S	0.10	160	7 4	0.230	× ×	2 25.	.7			RAM"		167	41
999320	2011-12-30 20:06	6 15	sw	RAINBOW	SURFACE OIL SLICE AERIAL FLIGHT. FO LINE WEST-EAST, A METALLIC GRAY AN SURFACE SHEEN. WEST END BY A SM AND A LARGER WH CROSS ON ITS TOP WEATHERED (REDI THICK) OIL ALONG NONE ""WEB REPO	BOUT 0.5-NM WIDE, ID RAINBOW MARKED ON THE IALL ORANGE FLOAT ITE BUOY WITH A ! THERE IS DISH-BROWN AND THE I INF	E			7 0.5		0.0	<b>1</b>																
011 TO	TALS for (1	186) Tayl	or NRC	Reports								4,411	66,56		15														
	erage Daily										1,115	23				0.023													
	DIAN for *1 erage Daily			atellite NRC	Reports:						138	1.6	2		13	0.010	0.100	U											
				e NRC Repo																									
				rts (including O cluding OWOC							167 167		4				0.23						+						
	age Daily for (				j.																								
, i i Mvela	age Daily for (t	0, 0 <b>44</b> 00 C	, bservat	iona							702		25				0.32	2											
011 MEDI	AN for (6) OW	OC Observ	vations						4		464		21	3			0.310	0											
ote: B-NR	RC/NRC and O	WOC/B-NR	C Amt R	atios are simple	ONS and for same averages of the yea ful quantity than th	arly totals (equivale	ent to wei			e daily		152	74	2	4.9				1,505	i	2.0	9.	.9						
ote: B-NR	RC/NRC and O	WOC/B-NR	C Amt R	atios given here	d same-day Taylor are simple average ator), rather than th	s of the yearly total	ils noted berage of th	elow (equ	uivalent to tios.	weighted	1,090	25	5 12		9.3	0.017	0.118	B 70:	2 251	0.322	2 11.	3 56	3						
11 MEDI	ANS for (6) O	WOC OBSI	ERVATIO	NS and same-da	ay Taylor NRC Rep	orts:																							
	. (-, 0				. ,						346		5 4	)	9.0	0.015	0.100	0 464	218	0.310	3.:	41.	.5						

