Index: Federal Waters Vessel Emission Summary Tables

Table No.	Table Name
Table FW 1	Federal Waters Vessels Emissions Summary
Table FW 2	Tug/Supply Vessel Main Engine Emission Summary
Table FW 3	Tug/Supply Vessel Generator Engine Emission Summary
Table FW 4	Tug/Supply Vessel Activity Summary
Table FW 5	Crew Boat Main Engine Emission Summary
Table FW 6	Crew Boat Generator Engine Emission Summary
Table FW 7	Crew Boat Activity Summary
Table FW 8	LNG Carrier Vessel Emission Summary
Table FW 9	LNG Carrier Vessel Activity Summary

Table FW 1: Federal Waters Vessels Emission Summary

Quantity	Description	Rating (each)	Fuel	Annual Emissions, tons per year					
				NO_X	ROC	CO	SO_2	PM_{10}	CO_2
2	Tug Supply Boat	15,000 BHP Mains	Gasified LNG & CA Diesel	33.3	12.7	47.1	0.02	1.6	11,476
1	Crew Boat	1,500 BHP Mains	Gasified LNG	2.6	0.5	2.4	0.00	0.0	469
1	LNG Carrier	60,000 BHP Total	Gasified LNG & CA Diesel	61.9	8.4	40.0	0.01	0.8	7,893
Total Emissions (gasified LNG & CA diesel pilot fuel)				**97.8**	**21.6**	**89.5**	**0.03**	**2.4**	**19,839**

Vessel Notes:

Assist tugs (pair) conducting LNG carrier to FSRU berthing operations 130 times per year, time & load weighted engine operation

Tug Supply boat making 52 round trips to FSRU per year, time & load weighted engine operation

Crew boat making 260 round trips to FSRU per year, time & load weighted engine operation

LNG carrier to FSRU berthing operations, 14 miles slow, 3 miles to FSRU with assist tugs, time & load weighted engine operation

Operating component in federal waters only (outside 3-mile limit)

LNG Carrier & Tug Supply dual fuel is 99% gasified LNG / 1% CA diesel by weight (99.2% / 0.8% by heat input)

Crew boat is 100% gasified LNG

Table FW 2: Tug/Supply Vessel Main Engine Emissions Summary

SIC	1321		
PROCESS EQPT DESCRIPTION	Tug Supply Main Generator Set Engines, 15,000 BHP, 2 vessels alternating port calls		
FUEL TYPE/PROCESS INFO	Scarborough LNG, 99.7% methane, 1 ppmv S & 15 ppmw S California diesel pilot charge		
TOTAL YEARLY PROCESS RATE	21242	MW-hrs	
HOURLY PROCESS RATE	1.23	MW	
PROCESS UNITS	PT071	MW-hrs	
HIGHER HEATING VALUE	1007.6	BTU/cu ft	Scarborough LNG
COMBINED ENGINE RATING	15000	BHP	from BHP estimates
LOAD FACTOR	11%	percent	from activity profile
OPERATING SCHEDULE	17264	hrs/yr	from activity profile
HEAT RATE	9751	BTU/KW-hr	
CONVERSION EFFICIENCY	35.0%	percent	
HEAT INPUT	12.00	mmBTU/hr	
DRY Fd	8710	dscf/mmBTU	USEPA Method 19
EXHAUST FLOW	0.37	mmdscf/hr	

EMITTENT NAME	EMITTENT PPMV	CORR FACTOR	CTL EF LBS/UNIT	ACTUAL LBS/YR	ACTUAL TONS/YR	2 Vessels ACTUAL LBS/HR	RATE* g/kw-hr	RATE g/bhp-hr
Nitrogen Oxides (as NO_2)	80	1.0000	2.8660	60,880	30.44	7.05	1.300	0.969
Reactive Hydrocarbons (ROC) as CH_4	92	1.0000	1.1464	24,352	12.18	2.82	0.520	0.388
Carbon Monoxide (CO)	192	1.0000	4.1888	88,979	44.49	10.31	1.900	1.417
Sulfur Dioxide (SO_2)	0.03	1.0654	0.0017	36	0.02	0.00	0.0008	0.0006
Particulates (as PM_{10}) (grains/dscf)	0.0033	1.0000	0.1433	3,044	1.52	0.35	0.065	0.048
Carbon Dioxide (CO_2)	3.00%	1.0000	1031.7688	21,916,892	10,958	2,539	468	349

Wartsila Emission Factors for Series 32DF Engines

NO_X = 1.3 g/kw-hr (Wartsila Specification 16 March 2006)

VOC = 0.52 g/kw-hr (Warsila Report Specification 16 March 2006, corrected to 8% nonmethane per AP-42 Table 3.2-2)

CO = 1.9 g/kw-hr (Wartsila Specification 16 March 2006)

SO_2 = 1.65 E-4 lb/mmBTU (for 1 ppmv S)

PM_{10} = 0.065 g/kw-hr (Wartsila quote 16 February 2006)

CO_2 = 468 g/kw-hr (Wartsila Report 4 July 2003)

Tug Supply dual fuel is 99% gasified LNG / 1% CA diesel by weight (99.2% / 0.8% by heat input)

Power output	28,485,600	BHP-hr/yr

Table FW 3: Tug/Supply Vessel Generator Engines Emission Summary

SIC	1321		
PROCESS EQPT DESCRIPTION	Tug Supply Auxiliary Generator, 150 BHP, 2 vessels alternating port calls		
FUEL TYPE/PROCESS INFO	Scarborough LNG, 99.7% methane, 1 ppmv S		
TOTAL YEARLY PROCESS RATE	966	MW-hrs	
HOURLY PROCESS RATE	0.06	MW	
PROCESS UNITS	PT071	MW-hrs	
HIGHER HEATING VALUE	1007.6	BTU/cu ft	Scarborough LNG
COMBINED ENGINE RATING	150	BHP	from BHP estimates
LOAD FACTOR	50%	percent	from activity profile
OPERATING SCHEDULE	17264	hrs/yr	from activity profile
HEAT RATE	9751	BTU/KW-hr	
CONVERSION EFFICIENCY	35.0%	percent	
HEAT INPUT	0.55	mmBTU/hr	
DRY Fd	8710	dscf/mmBTU	USEPA Method 19
EXHAUST FLOW	0.02	mmdscf/hr	

EMITTENT NAME	EMITTENT PPMV	CORR FACTOR	CTL EF LBS/UNIT	ACTUAL LBS/YR	ACTUAL TONS/YR	2 Vessels ACTUAL LBS/HR	RATE* g/kw-hr	RATE g/bhp-hr
Nitrogen Oxides (as NO_2)	165	1.0000	5.9128	5,709	2.85	0.66	2.682	2.000
Reactive Hydrocarbons (ROC) as CH_4	92	1.0000	1.1507	1,111	0.56	0.13	0.522	0.389
Carbon Monoxide (CO)	248	1.0000	5.4315	5,244	2.62	0.61	2.464	1.837
Sulfur Dioxide (SO_2)	0.03	1.0000	0.0016	2	0.00	0.00	0.0007	0.0005
Particulates (as PM_{10}) (grains/dscf)	0.0023	1.0000	0.0975	94	0.05	0.01	0.044	0.033
Carbon Dioxide (CO_2)	3.12%	1.0000	1072.6571	1,035,702	518	120	487	363

Gas Emission Factors (AP-42 Table 3.2-2)

NO_X = 2.682 g/kw-hr (CAT Series GLE Engines 2.0 g/bhp-hr)

VOC = 0.118 lb/mmBTU

CO = 0.557 lb/mmBTU

SO_2 = 1.65 E-4 lb/mmBTU (for 1 ppmv S)

PM_{10} = 0.010 lb/mmBTU

CO_2 = 110 lb/mmBTU

Power output	1,294,800	BHP-hr/yr

Unit conversion from AP-42/CAT	lb/mmBTU	BTU/kw-hr	g/kw-hr
Nitrogen Oxides (as NO_2)	0.606	9751	2.682
Reactive Hydrocarbons (ROC) as CH_4	0.118	9751	0.522
Carbon Monoxide (CO)	0.557	9751	2.464
Sulfur Dioxide (SO_2)	1.65E-04	9751	0.001
Particulates (as PM_{10})	0.01	9751	0.044
Carbon Dioxide (CO_2)	110	9751	486.547

Table FW 4: Tug/Supply Vessel Activity Summary

Assist Tugs

Berthing Activity	Miles	Speed	Time, hrs	Mains	Weighted	Mode 1	Mode 2	Gens	Weighted	Mode 1	Mode 2
Standby/Patrol to LNG Carrier	3	18.5	0.16	51%	0.3%	2.7%	1.0%	50%	0.3%	0.7%	0.2%
Assist Carrier to FSRU	3	5	0.60	43%	1.1%	8.4%	3.0%	50%	1.2%	2.5%	0.9%
Assist Big Push			0.04	100%	0.2%	1.3%	0.5%	50%	0.1%	0.2%	0.1%
Safety Zone	0.3	1	0.30	22%	0.3%	2.1%	0.8%	50%	0.6%	1.2%	0.5%
Unload Standby/Patrol Safety Zone	0	min	21.80	10%	9.1%	70.9%	25.6%	50%	45.4%	90.8%	32.8%
Safety Zone	0.3	1	0.30	22%	0.3%	2.1%	0.8%	50%	0.6%	1.2%	0.5%
Safety Zone Big Push			0.04	100%	0.2%	1.3%	0.5%	50%	0.1%	0.2%	0.1%
Assist Carrier to Release	3	5	0.60	43%	1.1%	8.4%	3.0%	50%	1.2%	2.5%	0.9%
Release to Standby/Patrol	3	18.5	0.16	51%	0.3%	2.7%	1.0%	50%	0.3%	0.7%	0.2%
Composite			**24.00**		**13%**	**100.0%**	**36.1%**		**50.0%**	**100.0%**	**36.1%**
Two Vessels (per week)			**120.0**								

Remarks - Berthing
2.5 berthings/wk = 130 berthings/yr
2.5 berthings/wk x 24 hrs x 2 vessels = 120 hrs/wk @ 13% power on mains
ship generators run all the time, so
2.5 berthings/wk x 24 hrs x 2 vessels = 120 hrs/wk @ 50% power on gens

Federal Waters Transit	Miles	Speed	Time, hrs	Mains	Weighted	Mode 1	Mode 2	Gens	Weighted	Mode 1	Mode 2
Loiter to Safety Zone	0.7	5	0.1	14%	0.5%	3.3%	0.1%	50%	1.7%	3.5%	0.1%
Safety Zone	0.3	1	0.3	12%	0.9%	6.1%	0.1%	50%	3.7%	7.5%	0.2%
Load/Unload Safety Zone	0	stop	2.3	0%	0.0%	0.0%	0.0%	50%	28.7%	57.3%	1.4%
Safety Zone	0.3	1	0.3	12%	0.9%	6.1%	0.1%	50%	3.7%	7.5%	0.2%
Cruise from Safety Zone to Boundary	18	18.5	1.0	51%	12.4%	84.4%	2.0%	50%	12.1%	24.2%	0.6%
Composite Each Way			**4.0**		**15%**	**100.0%**	**2.4%**		**50.0%**	**100.0%**	**2.4%**
Round Trip (per week)			**8.0**								

Remarks - Federal Waters Transit
1 roundtrip/week = 52 roundtrips/year
1 trips/wk x 8 hr/trip = 8 hrs/wk @ 15% power on mains
ship generators run all the time, so
1 trips/wk x 8 hr/trip = 8 hrs/wk @ 50% power on gens

Time Balance (hrs/wk)	Miles	Speed	Time, hrs	Mains	Weighted	Mode 1	Mode 2	Gens	Weighted	Mode 1	Mode 2
Hours per week (2 vessels)			336								
District Waters & Port Time			4								
In Federal Waters			332								
Berthing Activity			120	13%	4.6%						
Transit			8	15%	0.4%						
Standby/Patrol Safety Zone (balance)			204	10%	6.1%	100.0%	61.4%	50%	50.0%	100.0%	61.4%
Total Time in Federal Waters			**332**		**11%**	**100.0%**	**61.4%**		**50%**	**100.0%**	**61.4%**
Per Year			**17,264**		**11%**				**50%**		

Remarks - Federal Waters
52 wks/yr x 332 hrs/wk = 17,264 hrs/yr (2 vessels) @ 11% power on mains
ship generators run all the time, so
17,264 hrs/yr @ 50% power

	29,780,400	28,485,600	1,294,800
	Modal Wt	**Mains**	**Gens**
Assist/Standby/Loiter	8.3%	8.6%	2.4%
Safety Zone/Patrol	89.7%	89.4%	95.6%
Load/Unload	0.1%	0.0%	1.4%
Transit to/from Boundary/Limit	2.0%	2.0%	0.6%
	100.0%	100.0%	100.0%

Table FW 5: Crewboat Main Engine Emissions Summary

SIC	1321		
PROCESS EQPT DESCRIPTION	Crew Boat Main Engines, 1500 BHP		
FUEL TYPE/PROCESS INFO	Scarborough LNG, 99.7% methane, 1 ppmv S		
TOTAL YEARLY PROCESS RATE	774	MW-hrs	
HOURLY PROCESS RATE	0.43	MW	
PROCESS UNITS	PT071	MW-hrs	
HIGHER HEATING VALUE	1007.6	BTU/cu ft	Scarborough LNG
COMBINED ENGINE RATING	1500	BHP	from BHP estimates
LOAD FACTOR	38%	percent	from activity profile
OPERATING SCHEDULE	1820	hrs/yr	from activity profile
HEAT RATE	9751	BTU/KW-hr	
CONVERSION EFFICIENCY	35.0%	percent	
HEAT INPUT	4.14	mmBTU/hr	
DRY Fd	8710	dscf/mmBTU	USEPA Method 19
EXHAUST FLOW	0.13	mmdscf/hr	

EMITTENT NAME	EMITTENT PPMV	CORR FACTOR	CTL EF LBS/UNIT	ACTUAL LBS/YR	ACTUAL TONS/YR	ACTUAL LBS/HR	RATE* g/kw-hr	RATE g/bhp-hr
Nitrogen Oxides (as NO_2)	165	1.0000	5.9128	4,574	2.29	2.51	2.682	2.000
Reactive Hydrocarbons (ROC) as CH_4	92	1.0000	1.1507	890	0.45	0.49	0.522	0.389
Carbon Monoxide (CO)	248	1.0000	5.4315	4,202	2.10	2.31	2.464	1.837
Sulfur Dioxide (SO_2)	0.03	1.0000	0.0016	1	0.00	0.00	0.0007	0.0005
Particulates (as PM_{10}) (grains/dscf)	0.0023	1.0000	0.0975	75	0.04	0.04	0.044	0.033
Carbon Dioxide (CO_2)	3.12%	1.0000	1072.6571	829,809	415	456	487	363

Gas Emission Factors (AP-42 Table 3.2-2)

NO_X = 2.682 g/kw-hr (CAT Series GLE Engines 2.0 g/bhp-hr)

VOC = 0.118 lb/mmBTU

CO = 0.557 lb/mmBTU

SO_2 = 1.65 E-4 lb/mmBTU (for 1 ppmv S)

PM_{10} = 0.010 lb/mmBTU

CO_2 = 110 lb/mmBTU

Power output	1,037,400	BHP-hr/yr

Unit conversion from AP-42/CAT	lb/mmBTU	BTU/kw-hr	g/kw-hr
Nitrogen Oxides (as NO_2)	0.606	9751	2.682
Reactive Hydrocarbons (ROC) as CH_4	0.118	9751	0.522
Carbon Monoxide (CO)	0.557	9751	2.464
Sulfur Dioxide (SO_2)	1.65E-04	9751	0.001
Particulates (as PM_{10})	0.01	9751	0.044
Carbon Dioxide (CO_2)	110	9751	486.547

Table FW 6: Crew Boat Generator Engines Emissions Summary

SIC	1321		
PROCESS EQPT DESCRIPTION	Crew Boat Generator Engine, 150 BHP		
FUEL TYPE/PROCESS INFO	Scarborough LNG, 99.7% methane, 1 ppmv S		
TOTAL YEARLY PROCESS RATE	102	MW-hrs	
HOURLY PROCESS RATE	0.06	MW	
PROCESS UNITS	PT071	MW-hrs	
HIGHER HEATING VALUE	1007.6	BTU/cu ft	Scarborough LNG
COMBINED ENGINE RATING	150	BHP	from BHP estimates
LOAD FACTOR	50%	percent	from activity profile
OPERATING SCHEDULE	1820	hrs/yr	from activity profile
HEAT RATE	9751	BTU/KW-hr	
CONVERSION EFFICIENCY	35.0%	percent	
HEAT INPUT	0.55	mmBTU/hr	
DRY Fd	8710	dscf/mmBTU	USEPA Method 19
EXHAUST FLOW	0.017	mmdscf/hr	

EMITTENT NAME	EMITTENT PPMV	CORR FACTOR	CTL EF LBS/UNIT	ACTUAL LBS/YR	ACTUAL TONS/YR	ACTUAL LBS/HR	RATE* g/kw-hr	RATE g/bhp-hr
Nitrogen Oxides (as NO_2)	165	1.0000	5.9128	602	0.30	0.33	2.682	2.000
Reactive Hydrocarbons (ROC) as CH_4	92	1.0000	1.1507	117	0.06	0.06	0.522	0.389
Carbon Monoxide (CO)	248	1.0000	5.4315	553	0.28	0.30	2.464	1.837
Sulfur Dioxide (SO_2)	0.03	1.0000	0.0016	0	0.00	0.00	0.0007	0.0005
Particulates (as PM_{10}) (grains/dscf)	0.0023	1.0000	0.0975	10	0.00	0.01	0.044	0.033
Carbon Dioxide (CO_2)	3.12%	1.0000	1072.6571	109,185	55	60	487	363

Gas Emission Factors (AP-42 Table 3.2-2)

NO_X = 2.682 g/kw-hr (CAT Series GLE Engines 2.0 g/bhp-hr)

VOC = 0.118 lb/mmBTU

CO = 0.557 lb/mmBTU

SO_2 = 1.65 E-4 lb/mmBTU (for 1 ppmv S)

PM_{10} = 0.010 lb/mmBTU

CO_2 = 110 lb/mmBTU

Power output	136,500	BHP-hr/yr

Unit conversion from AP-42/CAT	lb/mmBTU	BTU/kw-hr	g/kw-hr
Nitrogen Oxides (as NO_2)	0.606	9751	2.682
Reactive Hydrocarbons (ROC) as CH_4	0.118	9751	0.522
Carbon Monoxide (CO)	0.557	9751	2.464
Sulfur Dioxide (SO_2)	1.65E-04	9751	0.001
Particulates (as PM_{10})	0.01	9751	0.044
Carbon Dioxide (CO_2)	110	9751	486.547

Table FW 7: Crew Boat Activity Summary

Crew Boats

Support Activity	Miles	Speed	Time, hrs	Mains	Weighted	Mode	Gens	Weighted	Mode
Boundary to FSRU	18	18	1.00	90%	12.9%	33.6%	50%	7.1%	14.3%
Loiter FSRU/Patrol	3.50	2	1.75	19%	4.8%	12.4%	50%	12.5%	25.0%
Safety Zone	0.3	1	0.30	16%	0.7%	1.8%	50%	2.1%	4.3%
Load/Unload Standby	0	stop	0.90	13%	1.7%	4.4%	50%	6.4%	12.9%
Safety Zone	0.3	1	0.30	16%	0.7%	1.8%	50%	2.1%	4.3%
Loiter FSRU/Patrol	3.50	2	1.75	19%	4.8%	12.4%	50%	12.5%	25.0%
Cruise to Boundary	18	18	1.00	90%	12.9%	33.6%	50%	7.1%	14.3%
Composite			**7.00**		**38%**	**100.0%**		**50%**	**100.0%**
Per Year			**1820**		**38%**			**50%**	

Remarks - Federal Waters Transit

2 roundtrip/berthing = 5 roundtrips/week or 260 roundtrips/year
260 trips/yr x 7 hrs/trip = 1820 hrs/yr @ 38% power on mains
ship generators run all the time, so
260 trips/yr x 7 hrs/trip = 1820 hrs/yr @ 50% power

BHP-hr/yr	1,173,900	1,037,400	136,500
	Modal Wt	**Mains**	**Gens**
Assist/Standby/Loiter/Patrol	27.8%	24.8%	50.0%
Safety Zone	4.2%	3.6%	8.6%
Load/Unload	5.4%	4.4%	12.9%
Transit to/from Boundary/Limit	62.7%	67.2%	28.6%
	100.0%	100.0%	100.0%

Table FW 8: LNG Carrier Vessel Emission Summary

SIC	1321		
PROCESS EQPT DESCRIPTION	LNG Carrier, 60,000 BHP Total		
FUEL TYPE/PROCESS INFO	Scarborough LNG, 99.7% methane, 1 ppmv S & 15 ppmw S California diesel pilot charge		
TOTAL YEARLY PROCESS RATE	16752	MW-hrs	
HOURLY PROCESS RATE	5.37	MW	
PROCESS UNITS	PT071	MW-hrs	
HIGHER HEATING VALUE	1007.6	BTU/cu ft	Scarborough LNG
COMBINED ENGINE RATING	60000	BHP	from BHP estimates
LOAD FACTOR	12%	percent	from activity profile
OPERATING SCHEDULE	3120	hrs/yr	from activity profile
HEAT RATE	8533	BTU/KW-hr	
CONVERSION EFFICIENCY	40.0%	percent	
HEAT INPUT	45.81	mmBTU/hr	
DRY Fd	8713	dscf/mmBTU	USEPA Method 19
EXHAUST FLOW	1.41	mmdscf/hr	

EMITTENT NAME	EMITTENT PPMV	CORR FACTOR	CTL EF LBS/UNIT	ACTUAL LBS/YR	ACTUAL TONS/YR	ACTUAL LBS/HR	RATE g/kw-hr	RATE g/bhp-hr
Nitrogen Oxides (as NO_2)	235	1.0222	7.3875	123,752	61.88	39.66	3.351	2.499
Reactive Hydrocarbons (ROC) as CH_4	92	0.9976	1.0044	16,826	8.41	5.39	0.456	0.340
Carbon Monoxide (CO)	249	1.0042	4.7726	79,948	39.97	25.62	2.165	1.614
Sulfur Dioxide (SO_2)	0.03	1.0654	0.0015	25	0.01	0.01	0.0007	0.0005
Particulates (as PM_{10}) (grains/dscf)	0.0024	1.0720	0.0915	1,532	0.77	0.49	0.0415	0.031
Carbon Dioxide (CO_2)	3.13%	1.0040	942.3293	15,785,597	7,893	5,059	427	319

Gas Emission Factors (AP-42 Table 3.2-2)

NO_X = 0.847 lb/mmBTU

ROC = 0.118 lb/mmBTU

CO = 0.557 lb/mmBTU

SO_2 = 1.65 E-4 lb/mmBTU (for 1 ppmv S)

PM_{10} = 0.010 lb/mmBTU

CO_2 = 110 lb/mmBTU

Power output	22,464,000	BHP-hr/yr

Unit conversion from AP-42	lb/mmBTU	BTU/kw-hr	g/kw-hr
Nitrogen Oxides (as NO_2)	0.847	8533	3.278
Reactive Hydrocarbons (ROC) as CH_4	0.118	8533	0.457
Carbon Monoxide (CO)	0.557	8533	2.156
Sulfur Dioxide (SO_2)	1.65E-04	8533	0.001
Particulates (as PM_{10})	0.01	8533	0.039
Carbon Dioxide (CO_2)	110	8533	425.728

LNGC dual fuel is 99% gasified LNG / 1% CA diesel by weight (99.2% / 0.8% by heat input)
Gas emission factors corrected for diesel pilot fuel fraction per AP-42 Table 3.4-1 and S content

Table FW 9: LNG Carrier Vessel Activity Summary

LNG Carriers

Berthing Activity	Miles	Speed	Time, hrs	BHP	Percent	Weighted	Mode
25 to 16 miles	9.0	12	0.75	28500	48%	1.5%	12.4%
16 to 13 miles	3.0	5	0.60	11400	19%	0.5%	4.0%
Safety Zone	0.3	1	0.30	5440	9%	0.1%	0.9%
Unload	0.0	stop	20.70	5440	9%	7.8%	65.4%
Safety Zone	0.3	1	0.30	5440	9%	0.1%	0.9%
13 to 16 miles	3.0	5	0.60	11400	19%	0.5%	4.0%
16 to 25 miles	9.0	12	0.75	28500	48%	1.5%	12.4%
Composite			**24.00**			**12%**	**100.0%**
Per Year			**3120**			**12%**	

Remarks - Federal Waters Transit

2.5 berthings/wk = 130 berthings/yr

130 berthings/yr x 24 hrs = 3120 hrs/yr @ 12% power

	Modal Wt	Mode
Assist/Standby/Loiter	7.9%	7.9%
Safety Zone/Patrol	1.9%	1.9%
Load/Unload	65.4%	65.4%
Transit to/from Boundary/Limit	24.8%	24.8%
	100.0%	100.0%