Benzene Waste Operations NESHAPS (40 CFR Part 61, Subpart FF) Annual Report
Reporting Period January 1, 2015 - December 31, 2015
Monroe Energy
Trainer Refinery

Total Annual Benzene Quantity = 341.51 Mg/yr
Uncontrolled Benzene Quantity per 61.342(e) [6 BQ Treat to Target] = 4.24 Mg/yr

General/Identification Information													40 CFR 61 Subpart FF (BWON) TAB												
Process Unit	Vessel or Equipment	Stream Description	Waste Stream Type					Benzene Controls		Water Content		Aqueous Phase				Organic Phase				Stream Totals		Benzene Waste Totals		
			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
ISOCRACKER UNIT	21-V-6	SPLITTER ACCUMULATOR TO PROCESS WATER SEWER	X						X		X	5.29	17.32	15.6	<0.01	800.	57,099.41	11,910.63	<0.01	0.34	<0.01	463.46	<0.01	<0.01
ISOCRACKER UNIT	21-K-6/7	DEBUTANIZER DEPROPANIZER FEED COMPRESSOR TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.75	6.25	5.	<0.01	<0.01	<0.01	5.	<0.01	<0.01
ISOCRACKER UNIT	21-K-1/5A	COMPRESSOR TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.75	6.25	5.	<0.01	<0.01	<0.01	5.	<0.01	<0.01
ISOCRACKER UNIT	21-K-1/5B	COMPRESSOR TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.75	6.25	5.	<0.01	<0.01	<0.01	5.	<0.01	<0.01
LAB WASTE	N/A	LAB SAMPLNIG WASTE TO LAB TANK	X						X		X	-0-	302,472.09	41,270.86	-0-	-0-	302,472.09	41,270.86	0.8	19.29	0.05	41,270.86	0.8	0.8
LAB WASTE	N/A	LAB SAMPLNIG WASTE TO PROCESS WATER SEWER	X						X		X	-0-	10,000.	475.45	-0-	-0-	10,000.	475.45	0.01	25.69	0.06	475.45	0.01	0.01
C.O. BOILER	C-300	VENT GAS K.O. POT TO PROCESS WATER SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	1.65	<0.01	<0.01
C.O. BOILER	N/A	LUBE OIL PURIFIER TO PROCESS WATER SEWER	X						X		X	0.04	0.06	0.05	<0.01	3.75	6.25	5.	<0.01	0.02	<0.01	0.27	<0.01	<0.01
HF/ALKYLATION UNIT	RELIEF VALVES	RELIEF VALVES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	LEVEL GUAGES	LEVEL GUAGES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2647	BUTANE ALUMINA TREATERS TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	13.25	0.03	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2648	BUTANE ALUMINA TREATERS TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	13.25	0.03	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	V-205	COALESCER (V-205) TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	06-V-116	BUTANE KOH TREATER KNOCKOUT POT TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	26.49	0.05	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	PV-1513	ALKY FEED SURGE DRUM (505 TANK) TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	52.98	0.11	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2591	ALKY FEED COALESCER TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	13.25	0.03	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2588	FEED DRIERS TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	6.62	0.01	<0.01	<0.01	<0.01

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Process Unit	Vessel or Equipment	Stream Description	Waste Stream Type					Benzene Controls		Water Content		Aqueous Phase				Organic Phase				Stream Totals		Benzene Waste Totals		
			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
HF/ALKYLATION UNIT	PV-2589	FEED DRIERS TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	6.62	0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	06-V-115	DISENGAGING POT TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	<0.01	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2534	POLYMER SURGE DRUM TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,461.53	2.78	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2628	PARALLEL POLYMER SURGE DRUM TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,461.53	2.78	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	Sample Station	ALKYLATE SAMPLE STATION TO ACID SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	<0.01	<0.01	<0.01	0.24	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2519	ALUMINA TOWER PREHEATER TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2520	ALUMINA TOWER PREHEATER TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	06-V-117	PROPANE KOH TREATER KO POT TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	6.62	0.01	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2651	PROPANE COALESCER TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.38	<0.01	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2634	LIQUID TRAP TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.44	<0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2636	SCRUBBER K.O. DRUM TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3.46	0.01	<0.01	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2586	RELIF GAS SCRUBBER (LEVEL CHECKS) TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.19	<0.01	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	PV-2586	RELIF GAS SCRUBBER TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.36	<0.01	9.39	<0.01	<0.01
HF/ALKYLATION UNIT	Sample Station	CAUSTIC SAMPLE STATION TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	-0-	-0-	-0-	-0-	0.25	<0.01	10.	<0.01	<0.01
HF/ALKYLATION UNIT	PV-6029	VENT GAS K.O. POT TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.19	<0.01	9.41	<0.01	<0.01
HF/ALKYLATION UNIT	Sample Station	REGENERATED CAUSTIC SAMPLE STATION TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	<0.01	9.7	<0.01	<0.01
HF/ALKYLATION UNIT	Sample Station	PRE-WASH CAUSTIC SAMPLE STATION TO ACID SEWER	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	<0.01	9.7	<0.01	<0.01

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General/Identification Information													40 CFR 61 Subpart FF (BWON) TAB												
Process Unit	Vessel or Equipment	Stream Description	Waste Stream Type					Benzene Controls		Water Content		Aqueous Phase				Organic Phase				Stream Totals		Benzene Waste Totals		
			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
HF/ALKYLATION UNIT	PV-6050	PRE-CAUSTIC WASH (V-305) TO SPENT CAUSTIC TANK	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	22.25	0.04	9.7	<0.01	<0.01
HF/ALKYLATION UNIT	PV-1236	STABILIZER EXTRACTOR TO SPENT CAUSTIC TANK	X						X		X	7.5	12.5	10.	<0.01	<0.01	<0.01	<0.01	<0.01	22.25	0.04	9.7	<0.01	<0.01
HF/ALKYLATION UNIT	PV-6047	RAW FEED DRUM TO ACID SEWER	X						X		X	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	26.49	0.05	<0.01	<0.01	<0.01
FCC UNIT	RELIEF VALVES	RELIEF VALVES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.14	<0.01	205.83	<0.01	<0.01
FCC UNIT	LEVEL GUAGES	LEVEL GUAGES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.27	<0.01	205.83	<0.01	<0.01
FCC UNIT	N/A	THERMOJET OIL PURIFIER TO PROCESS WATER SEWER	X						X		X	0.04	0.06	0.05	<0.01	3.75	6.25	5.	<0.01	0.19	<0.01	0.5	<0.01	<0.01
FCC UNIT	N/A	FILTERS TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.75	6.25	5.	<0.01	0.07	<0.01	5.	<0.01	<0.01
FCC UNIT	07-V-111	FUEL GAS FILTER/COALESCER TO PROCESS WATER SEWER	X						X		X	3.68	6.13	4.9	<0.01	367.5	612.5	490.	<0.01	<0.01	<0.01	344.47	<0.01	<0.01
FCC UNIT	Sample Station	FEED SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	400.	80.	<0.01	0.13	<0.01	80.	<0.01	<0.01
FCC UNIT	07-E-112	FRAID COOLER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	400.	80.	<0.01	0.89	<0.01	80.	<0.01	<0.01
FCC UNIT	07-T-104	50% CAUSTIC STORAGE TANK TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	<0.01	<0.01	-0-	-0-	-0-
FCC UNIT	N/A	SEAL OIL RESERVOIR TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.02	<0.01	472.74	<0.01	<0.01
FCC UNIT	N/A	SEAL OIL PURIFIER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.18	<0.01	472.74	<0.01	<0.01
FCC UNIT	07-V-114	AMMONIUM POLYSULFIDE STORAGE VESSEL TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	0.04	<0.01	-0-	-0-	-0-
FCC UNIT	Sample Station	LCO SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.21	<0.01	205.83	<0.01	<0.01
FCC UNIT	N/A	TOP REFLUX STRAINERS TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	65,004.33	9,359.77	<0.01	0.03	<0.01	9,359.77	<0.01	<0.01
FCC UNIT	Sample Station	ICO SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.21	<0.01	205.83	<0.01	<0.01

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Process Unit	Vessel or Equipment	Stream Description	Waste Stream Type					Benzene Controls		Water Content		Aqueous Phase				Organic Phase				Stream Totals		Benzene Waste Totals		
			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
FCC UNIT	Sample Station	HCO SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.21	<0.01	205.83	<0.01	<0.01
FCC UNIT	E-11A	SLURRY-FEED EXCHANGER (PV-7745) TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	400.	80.	<0.01	<0.01	<0.01	80.	<0.01	<0.01
FCC UNIT	Sample Station	FRACTIONATOR BOTTOM SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	<0.01	<0.01	205.83	<0.01	<0.01
FCC UNIT	E-7A	SLURRY STEAM GENERATOR (PV-7741) TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	400.	80.	<0.01	<0.01	<0.01	80.	<0.01	<0.01
FCC UNIT	E-7B	SLURRY STEAM GENERATOR (PV-7742) TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	400.	80.	<0.01	<0.01	<0.01	80.	<0.01	<0.01
FCC UNIT	Sample Station	CLARIFIED SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.85	<0.01	205.83	<0.01	<0.01
FCC UNIT	Sample Station	FCC LIGHT FLUID SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	11,105.92	8,054.32	<0.01	0.09	<0.01	8,054.32	<0.01	<0.01
FCC UNIT	Sample Station	FCC HEAVY FLUID SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	1,884.85	6,763.29	2,985.27	<0.01	0.1	<0.01	2,985.27	<0.01	<0.01
FCC UNIT	PV-7765	FUEL GAS K.O. POT (V-11) TO PROCESS WATER SEWER	X						X		X	3.68	6.13	4.9	<0.01	367.5	612.5	490.	<0.01	0.98	<0.01	441.49	<0.01	<0.01
OLD FLARE AREA	N/A	LOWLINE DRIP POT TO LIGHT SLOP OIL TANKS	X					X			X	-0-	650.04	93.6	0.02	-0-	65,004.33	9,359.77	0.56	253.43	0.53	2,285.47	0.58	-0-
DIESEL HYDROTREATER UNIT - 1	RELIEF VALVES	RELIEF VALVES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.14	<0.01	205.83	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	LEVEL GUAGES	LEVEL GUAGES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	0.27	<0.01	205.83	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	D-501	FEED SURGE DRUM TO PROCESS WATER SEWER	X						X		X	<0.01	3.3	2.06	<0.01	<0.01	330.	205.83	<0.01	6.81	0.01	19.82	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	Sample Station	DIESEL FEED SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	1.19	<0.01	205.83	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	PV-1609	FUEL GAS K.O. POT TO PROCESS WATER SEWER	X						X		X	3.68	6.13	4.9	<0.01	367.5	612.5	490.	<0.01	13.82	0.03	247.45	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	D-505	STRIPPER OVERHEAD RECEIVER TO LIGHT SLOP OIL TANKS	X					X			X	-0-	650.04	93.6	0.6	-0-	65,004.33	9,359.77	64.81	13,308.93	30.37	4,914.34	65.4	-0-
DIESEL HYDROTREATER UNIT - 1	Sample Station	REACTOR OUTLET SAMPLE STATION TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	<0.01	5.94	0.01	205.83	<0.01	<0.01

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			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
DIESEL HYDROTREATER UNIT - 1	PV-2130	1ST STAGE DISCHARGE VOLUME BOTTLE TO PROCESS WATER SEWER	X						X		X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	<0.01	1.19	<0.01	3,981.69	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	PV-2131	1ST STAGE DISCHARGE VOLUME BOTTLE TO PROCESS WATER SEWER	X						X		X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	<0.01	1.19	<0.01	3,981.69	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	PV-2128	1ST STAGE SUCTION VOLUME BOTTLE TO PROCESS WATER SEWER	X						X		X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	0.04	9.52	0.02	3,981.69	0.04	0.04
DIESEL HYDROTREATER UNIT - 1	PV-2129	1ST STAGE SUCTION VOLUME BOTTLE TO PROCESS WATER SEWER	X						X		X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	0.04	9.52	0.02	3,981.69	0.04	0.04
DIESEL HYDROTREATER UNIT - 1	PV-2184	DIESEL SALTER DRYER #1 TO PROCESS WATER SEWER	X						X		X	<0.01	3.3	2.06	<0.01	<0.01	330.	205.83	<0.01	40.88	0.08	19.82	<0.01	<0.01
DIESEL HYDROTREATER UNIT - 1	PV-2186	DIESEL SALTER DRYER #2 TO PROCESS WATER SEWER	X						X		X	<0.01	3.3	2.06	<0.01	<0.01	330.	205.83	<0.01	40.88	0.08	19.82	<0.01	<0.01
LOW LINE	RELIEF VALVES	RELIEF VALVES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	65,004.33	9,359.77	<0.01	0.11	<0.01	9,359.77	<0.01	<0.01
LOW LINE	LEVEL GUAGES	LEVEL GUAGES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	65,004.33	9,359.77	<0.01	0.23	<0.01	9,359.77	<0.01	<0.01
LOW LINE	05-K1-V2	SEAL OIL TRAP FROM 05-K-1 TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	0.03	61.58	0.13	472.74	0.03	0.03
LOW LINE	05-K1-V3	SEAL OIL TRAP FROM 05-K-1 TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	0.03	61.58	0.13	472.74	0.03	0.03
LOW LINE	05-K1-D2A	SEAL OIL FILTER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.03	<0.01	472.74	<0.01	<0.01
LOW LINE	05-K1-D2B	SEAL OIL FILTER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.03	<0.01	472.74	<0.01	<0.01
LOW LINE	05-K1-D1A	SEAL OIL FILTER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.03	<0.01	472.74	<0.01	<0.01
LOW LINE	05-K1-D1B	SEAL OIL FILTER TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	3.56	3,256.15	472.74	<0.01	0.03	<0.01	472.74	<0.01	<0.01
LOW LINE	05-V-3	SPONGE OIL SEPARATOR (PV-3502) TO LIGHT SLOP OIL TANKS	X				X				X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	0.09	62.66	0.13	1,511.99	0.09	-0-
LOW LINE	05-V-1	COMPRESSOR SUCTION K.O. DRUM TO LIGHT SLOP OIL TANKS	X				X				X	-0-	650.04	93.6	0.68	-0-	65,004.33	9,359.77	197.79	28,440.	69.52	6,978.83	198.48	-0-
LOW LINE	05-V-5	FCC GAS K.O. DRUM TO LIGHT SLOP OIL TANKS	X				X				X	8.	570.99	119.11	<0.01	800.	57,099.41	11,910.63	0.12	10.45	0.03	11,130.97	0.12	-0-

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Trainer Refinery

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Uncontrolled Benzene Quantity per 61.342(e) [6 BQ Treat to Target] = 4.24 Mg/yr

General/Identification Information												40 CFR 61 Subpart FF (BWON) TAB												
Process Unit	Vessel or Equipment	Stream Description	Waste Stream Type					Benzene Controls		Water Content		Aqueous Phase				Organic Phase				Stream Totals		Benzene Waste Totals		
			Process Wastewater	Product Tank Drawdown	Landfill Leachate	Other		Yes	No	<10%	>10%	Benzene Concentration (ppmw)			BQ	Benzene Concentration (ppmw)			BQ	Stream Annual Waste Quantity (Mg/yr)	Stream Flow Total (L/min)	Stream Flow Weighted Average Benzene Concentration (ppmw)	TAB	6BQ
												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
SUN OLIN	RELIEF VALVES	RELIEF VALVES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	65,004.33	9,359.77	<0.01	0.11	<0.01	9,359.77	<0.01	<0.01
SUN OLIN	LEVEL GUAGES	LEVEL GUAGES TO PROCESS WATER SEWER	X						X		X	-0-	-0-	-0-	-0-	-0-	65,004.33	9,359.77	<0.01	0.23	<0.01	9,359.77	<0.01	<0.01
SUN OLIN	09-V-03	COMPRESSOR SUCTION KNOCK-OUT POT TO PROCESS WATER SEWER	X						X		X	-0-	650.04	93.6	<0.01	-0-	65,004.33	9,359.77	<0.01	0.03	<0.01	3,981.69	<0.01	<0.01
BOILER HOUSE	79-T-1	GLAND CONDENSER SEAL TANK TO PROCESS WATER SEWER	X						X		X	0.04	32.56	4.73	-0-	3.56	3,256.15	472.74	<0.01	<0.01	<0.01	472.74	<0.01	<0.01
BOILER HOUSE	79-T-2	GLAND CONDENSER SEAL TANK TO PROCESS WATER SEWER	X						X		X	0.04	32.56	4.73	-0-	3.56	3,256.15	472.74	<0.01	<0.01	<0.01	472.74	<0.01	<0.01
BOILER HOUSE	79-T-3	GLAND CONDENSER SEAL TANK TO PROCESS WATER SEWER	X						X		X	0.04	32.56	4.73	-0-	3.56	3,256.15	472.74	<0.01	<0.01	<0.01	472.74	<0.01	<0.01
BOILER HOUSE	79-T-4	GLAND CONDENSER SEAL TANK TO PROCESS WATER SEWER	X						X		X	0.04	32.56	4.73	-0-	3.56	3,256.15	472.74	<0.01	<0.01	<0.01	472.74	<0.01	<0.01
BOILER HOUSE	N/A	LUBE OIL PURIFIER TO PROCESS WATER SEWER	X						X		X	0.04	0.06	0.05	-0-	3.75	6.25	5.	<0.01	<0.01	<0.01	5.	<0.01	<0.01
BOILER HOUSE	N/A	LUBE OIL PURIFIER TO PROCESS WATER SEWER	X						X		X	0.04	0.06	0.05	-0-	3.75	6.25	5.	<0.01	<0.01	<0.01	5.	<0.01	<0.01
MARINE VAPOR RECOVERY	83-V-2	GAS/OIL RECEIVER/SEPARATOR TO LIGHT SLOP OIL TANKS	X					X			X	0.04	32.56	4.73	-0-	3.56	3,256.15	472.74	<0.01	1.69	<0.01	472.74	<0.01	-0-
TANK MAINTENANCE	MULTIPLE	TANK MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	205.83	97.87	-0-	-0-	205.83	97.87	<0.01	73.13	0.15	97.87	<0.01	<0.01
TANK MAINTENANCE	MULTIPLE	TANK MAINTENANCE CLEANING	X						X		X	-0-	-0-	-0-	-0-	<0.01	330.	205.83	0.03	156.21	0.35	205.83	0.03	0.03
PUMP MAINTENANCE	MULTIPLE	PUMP MAINTENANCE (CONTROLLED)	X					X			X	-0-	302,472.09	14,996.15	-0-	-0-	302,472.09	14,996.15	0.18	12.17	0.03	14,996.15	0.18	-0-
PUMP MAINTENANCE	MULTIPLE	PUMP MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	158,064.24	2,374.74	-0-	-0-	158,064.24	2,374.74	0.07	29.35	0.06	2,374.74	0.07	0.07
FILTER MAINTENANCE	MULTIPLE	FILTER MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	9,359.77	1,220.32	-0-	-0-	9,359.77	1,220.32	<0.01	1.68	<0.01	1,220.32	<0.01	<0.01
EXCHANGER MAINTENANCE	MULTIPLE	EXCHANGER MAINTENANCE (CONTROLLED)	X					X			X	<0.01	15,700.25	2,954.22	-0-	<0.01	15,700.25	2,954.22	0.02	5.84	0.01	2,954.22	0.02	-0-
EXCHANGER MAINTENANCE	MULTIPLE	EXCHANGER MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	15,700.25	955.23	-0-	-0-	15,700.25	955.23	0.02	19.87	0.04	955.23	0.02	0.02

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												Min	Max	FWAA	(Mg/yr)	Min	Max	FWAA	(Mg/yr)				(Mg/yr)	(Mg/yr)
COMPRESSOR MAINTENANCE	MULTIPLE	COMPRESSOR MAINTENANCE (UNCONTROLLED)	X						X		X	472.74	472.74	472.74	-0-	472.74	472.74	472.74	<0.01	5.65	0.01	472.74	<0.01	<0.01
VALVE MAINTENANCE	MULTIPLE	VALVE MAINTENANCE (CONTROLLED)	X					X			X	<0.01	158,064.24	87,555.85	-0-	<0.01	158,064.24	87,555.85	<0.01	<0.01	<0.01	87,555.85	<0.01	-0-
VALVE MAINTENANCE	MULTIPLE	VALVE MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	302,472.09	4,957.68	-0-	-0-	302,472.09	4,957.68	<0.01	0.12	<0.01	4,957.68	<0.01	<0.01
MISCELLANEOUS MAINTENANCE	MULTIPLE	MISCELLANEOUS MAINTENANCE (CONTROLLED)	X					X			X	-0-	302,472.09	33,132.24	-0-	-0-	302,472.09	33,132.24	0.05	1.54	<0.01	33,132.24	0.05	-0-
MISCELLANEOUS MAINTENANCE	MULTIPLE	MISCELLANEOUS MAINTENANCE (UNCONTROLLED)	X						X		X	-0-	13,656.4	1,041.69	-0-	-0-	13,656.4	1,041.69	0.01	14.17	0.03	1,041.69	0.01	0.01
TURNAROUND	MULTIPLE	TURNAROUND (UNCONTROLLED)	X						X		X	-0-	107.57	80.38	-0-	-0-	107.57	80.38	<0.01	36.21	0.07	80.38	<0.01	<0.01
																					Totals		341.51	4.24