



March 26, 2014

Illinois Environmental Protection Agency
Bureau of Air
Air Quality Planning Section (#39)
P.O. Box 19276
Springfield, IL 62794-9276

Attn: Annual Emission Report

**Re: Annual Emissions Report, Reporting Year 2013
Shell Oil Products US
Roxana Site, I.D. No. 119090AAO**

To whom it may concern:

URS Corporation, on behalf of Shell Oil Products US, is submitting the enclosed Annual Emissions Report for activities at the Roxana Site. If you have any questions or need any additional information, please contact me at (314) 429-0100 or via email at nicholas.eldred@urs.com with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "N. Eldred", with a long horizontal flourish extending to the right.

Nicholas Eldred
Environmental Group Manager
URS Corporation

Enclosures: Annual Emissions Report, Reporting Year 2013

cc: Mr. Kevin E. Dyer, Shell Oil Products US

119090AAO - Shell Oil Products US


- SOURCE DATA -

AIRES:	17-119-0440	IEPA USE ONLY	SIC 1:	4613	NAICS 1:	486910
FINDS:		IEPA USE ONLY	SIC 2:		NAICS 2:	
FEIN:	522074528		SIC 3:		NAICS 3:	
D&B:			SIC 4:		NAICS 4:	
LATITUDE:	38:50:42.3168		SIC 5:		NAICS 5:	
LONGITUDE:	90:04:34.0752		SIC 6:		NAICS 6:	

SOURCE: Shell Oil Products US
 ADDRESS: Chaffer St. and 8th St.
 Roxana, IL 62084
 CONTACT: Kevin E. Dyer
 PHONE: (618) 288-7237

ANNUAL EMISSION REPORT MAILING ADDRESS: Shell Oil Products US
 17 Junction Dr. PMB 399
 Glen Carbon, IL 62034-43000
 CONTACT: Kevin E. Dyer
 PHONE: (618) 288-7237
 FAX:
 E-Mail:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.


 AUTHORIZED SIGNATURE
 Kevin E. Dyer, Sr. Principal Program Manager
 TYPED OR PRINTED NAME AND TITLE

DATE: 4/3/14
 TELEPHONE NUMBER: (618) 288-7237

119090AAO - Shell Oil Products US

- ANNUAL SOURCE EMISSIONS -

POLLUTANT CODE	SOURCE REPORTED EMISSIONS		ALLOWABLE* EMISSIONS (TONS/YEAR)	EMISSIONS REPORTED FOR 2012 (TONS/YEAR)	IEPA 2013 ESTIMATED EMISSIONS (TONS/YEAR)
	FOR 2013 (TONS/YEAR)				
CO	0.63		0.511056	0.820000	0.421949
CO2	903.54		681.408000	1,175.000000	602.784000
Methane	0.02		0.013060	0.130000	0.011553
N2O	0.02		0.012492	0.020000	0.011051
NH3	0.02		0.010171	0.030000	0.016074
NOx	0.75		0.620256	1.000000	0.502320
Part	0.06		0.048048	0.070000	0.038176
PM10	0.06		0.043156	0.070000	0.038176
PM2.5	0.06		0.043156	0.070000	0.038176
SO2	0.00		0.699696	0.010000	0.030140
VOM	4.67		24.920031	11.390000	11.503708

* The Allowable Emissions have been corrected to be consistent with the permitted annual emission rates in permits 10120040, 11050032, and 11060036. These permits do not contain limits for CO2, CO2E, N2O or NH3.

119090AAO - Shell Oil Products US

- PERMIT LISTING -

PERMIT NUMBER	TYPE OF PERMIT	OPERATION NAME	STATUS	STATUS DATE	EXPIRES
10120040	CONSTRUCTION	Soil Vapor Extraction Treatment System	GRANTED	03-01-2011	04-01-2012
11050032	CONSTRUCTION	Soil Vapor Extraction Treatment System w/Dual ICE	GRANTED	05-31-2011	05-31-2012
11060036	LIFETIME	SVE Treatment System	GRANTED	07-14-2011	07-14-2012
12040025 *	TITLE V	Treatment of Contaminated Soil Vapor			

* A renewal application was submitted to IEPA in April 2012.

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer

PERMIT: 11060036
 SCC: 40290013

MODE 01 - Natural gas combustion

DESCRIPTION CORRECTION:

BEGAN OPERATION: 06/2011 / 01/2012
 CEASED OPERATION: /

PERCENT THROUGHPUTS: DEC - FEB: 18.47% 23.40% MAR - MAY: 26.08% 25.39%
 JUN - AUG: 28.47% 25.45% SEP - NOV: 26.98% 25.76%

FUEL TYPE: 1 NATURAL GAS
 INPUT (MMBTU/HR): 1.4

HEAT CONTENT: Natural Gas 1,000 Btu/fl3
 SULFUR CONTENT (%):
 ASH CONTENT (%):
 NITROGEN CONTENT (%):

ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
HOURS/DAY:	24.0	HOURS/DAY:	24.0
DAYS/WEEK:	7.0	DAYS/WEEK:	7.0
WEEKS/YEAR:	46	WEEKS/YEAR:	13
HOURS/YEAR:	7,659	HOURS/YEAR:	2,121
RATE/HR:	0.08	START TIME:	00:00
		END TIME:	23:59
		RATE/HR:	0.0800

UNITS: MILLION CUBIC FEET BURNED MILLION BTU BURNED

UNITS: MILLION CUBIC FEET BURNED MILLION BTU BURNED

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer PERMIT: 11060036

BEGAN OPERATION: 01/2012
 CEASED OPERATION: / SCC: 40290013

MODE 01 - Natural Gas Combustion

POLLUTANT CODE	METHOD		IEPA	EMISSION FACTOR REPORTED	EMISSION RATE (LB/HR)	
	IEPA	REP			IEPA	REPORTED
CO	3	3	84	84 lbs/10 ⁶ scf	0.1092	0.01
CO ₂	3	3	120,000	120,000 lbs/10 ⁶ scf	156	10
Methane	3	3	2.3	2.3 lbs/10 ⁶ scf	0.00299	0.00
N ₂ O	3	3	2.2	2.2 lbs/10 ⁶ scf	0.00286	0.00
NH ₃	3	3	3.2	3.2 lbs/10 ⁶ scf	0.00416	0.00
NO _x	3	3	100	100 lbs/10 ⁶ scf	0.13	0.01
PM	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.00
PM ₁₀	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.00
PM _{2.5}	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.00
SO ₂	3	3	0.6	0.6 lb/10 ⁶ scf	0.00078	0.00
VOM*	3	NA	5.5	NA lbs/10 ⁶ scf	0.00715	NA

POLLUTANT CODE	METHOD		IEPA	EMISSION FACTOR REPORTED	EMISSION RATE (LB/HR)	
	IEPA	REP			IEPA	REPORTED
NO _x	3	3	100	100 lbs/10 ⁶ scf	0.0079	0.0076
VOM*	3	NA	NA	NA lbs/10 ⁶ scf	0	NA

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK 0003 CAPTURE EFFICIENCY: 100.00 % 100.00 %

*VOM emissions from combustion are accounted for in the SVE emissions on page 7.

119090AAO - Shell Oil Products US

- PROCESS DATA -

POINT 001 - Soil vapor extraction system PERMIT: 11060036

BEGAN OPERATION: 12/2010 05/2011

CEASED OPERATION: /

SCC: 50410310

MODE: 01 -

DESCRIPTION CORRECTION:

BEGAN OPERATION: 12/2010 05/2011 PERCENT THROUGHPUTS: DEC - FEB: 18.47% 23.40% MAR - MAY: 26.08% 25.39%
 CEASED OPERATION: / JUN - AUG: 28.47% 25.45% SEP - NOV: 26.98% 25.76%

UNITS: TONS PROCESSED HOURS OPERATED

ANNUAL OPERATION

HOURS/DAY: 24.0
 DAYS/WEEK: 7.0
 WEEKS/YEAR: 46
 HOURS/YEAR: 7,659

RATE/HR: 0.0000 NA*

UNITS: TONS PROCESSED HOURS OPERATED

PEAK OZONE SEASON OPERATION

HOURS/DAY: 24.0
 DAYS/WEEK: 7.0
 WEEKS/YEAR: 13
 HOURS/YEAR: 2,112

START TIME: 00:00
 END TIME: 23:59
 RATE/HR: 0.0000 NA*

*The rate/hr is not applicable because emissions are estimated using a measured emissions rate (lb/hr) and the system operating hours.

119090AAO - Shell Oil Products US

- PROCESS DATA -

POINT 001 - Soil vapor extraction system PERMIT: 11060036
BEGAN OPERATION: 12/2010 05/2011
CEASED OPERATION: /

SCC: 50410310

MODE: 01 -

POLLUTANT	METHOD	EMISSION FACTOR	EMISSION RATE (LB/HR)
CODE	IEPA REP	REPORTED	IEPA REPORTED
VOM	2 1	NA	2.97 1.12

POLLUTANT	METHOD	EMISSION FACTOR	OZONE SEASON EMISSION RATE (LB/HR)
CODE	IEPA REP	REPORTED	IEPA REPORTED
VOM	1 1	NA*	5.26 0.08

CAPTURING CONTROLS:
CONTROL 0001 CAPTURE EFFICIENCY: 100.00 % 100.00 %

CAPTURING STACKS:
STACK 0003

*The rate/hr is not applicable because emissions are estimated using a measured emissions rate (lb/hr) and the system operating hours.

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer PERMIT: 11060036

BEGAN OPERATION: / 01/2012
 CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

DESCRIPTION CORRECTION:

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PERCENT THROUGHPUTS: DEC - FEB: 23.40 % MAR - MAY: 25.39 %
 BEGAN OPERATION: / 01/2012 JUN - AUG: 25.45 % SEP - NOV: 25.76 %
 CEASED OPERATION: /

FUEL TYPE: 9 OTHER GASEOUS FUEL-SOIL VAPORS HEAT CONTENT: Soil Vapors 21,070 Btu/lb
 INPUT (MMBTU/HR): _____ SULFUR CONTENT (%): _____
 _____ ASH CONTENT (%): _____
 _____ NITROGEN CONTENT (%): _____

UNITS: MILLION BTU BURNED

UNITS: MILLION BTU BURNED

ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
HOURS/DAY:	24.0	HOURS/DAY:	24.0
DAYS/WEEK:	7.0	DAYS/WEEK:	7.0
WEEKS/YEAR:	50	WEEKS/YEAR:	13
HOURS/YEAR:	8,333	HOURS/YEAR:	2,121
RATE/HR:	1.76	START TIME:	00:00
		END TIME:	23:59
		RATE/HR:	1.87

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer PERMIT: 11060036

BEGAN OPERATION: / 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

POLLUTANT CODE	METHOD IEPA REP	EMISSION FACTOR		EMISSION RATE (LB/HR)	
		IEPA	REPORTED	IEPA	REPORTED
CO	3		84 lbs/10 ⁶ scf		0.14
CO ₂	3		120,000 lbs/10 ⁶ scf		207
Methane	3		2.3 lbs/10 ⁶ scf		0.00
N ₂ O	3		2.2 lbs/10 ⁶ scf		0.00
NH ₃	3		3.2 lbs/10 ⁶ scf		0.01
NO _x	3		100 lbs/10 ⁶ scf		0.17
PM	3		7.6 lbs/10 ⁶ scf		0.01
PM ₁₀	3		7.6 lbs/10 ⁶ scf		0.01
PM _{2.5}	3		7.6 lbs/10 ⁶ scf		0.01
SO ₂	3		0.6 lb/10 ⁶ scf		0.00
VOM*	NA		NA lbs/10 ⁶ scf		NA

POLLUTANT CODE	METHOD IEPA REP	EMISSION FACTOR		EMISSION RATE (LB/HR)	
		IEPA	REPORTED	IEPA	REPORTED
NO _x	3		100 lbs/10 ⁶ scf		0.18

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK 0003 CAPTURE EFFICIENCY: 100.00 %

*VOM emissions from combustion are accounted for in the SVE emissions on page 7.

119090A00 - Shell Oil Products US

- CONTROL DEVICE DATA -

CONTROL 0001 - Regenerative Thermal Oxidizer PERMIT: 11060036
BEGAN OPERATION: 06/2011 01/2012
CEASED OPERATION: / CONTROL CODE: 319 319

DESCRIPTION CORRECTION:

REMOVAL EFFICIENCY

POLLUTANT	ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
	EFFICIENCY IEPA	METHOD REPORTED	EFFICIENCY IEPA	METHOD REPORTED
VOM	97.00 %	99.30 %	99.30 %	1

CAPTURING CONTROLS:

CAPTURING STACKS:
STACK 0001 0003 CAPTURE EFFICIENCY: 100.00 % 100.00 %

NOTE: The RTO was tested for VOM destruction efficiency on June 25 and June 26, 2013.

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- STACK DATA -

STACK	DIAMETER (FT)		HEIGHT (FT)		FLOW RATE (ACFM)		TEMPERATURE (°F)	
	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED
0001	0.74	NA	48	NA	17020	NA	104	NA
0003	1.83	2.5	30	18.5	10,000	10,000	200	200

*The soil vapor extraction system (POINT 001) exhausts through STACK 0003.