



April 6, 2015

Mr. Chris Hines
Environmental Specialist
Encana Oil and Gas, Inc.
143 Diamond Avenue
Parachute, Colorado 81635

**RE: Remediation Update
I30 Pad
Garfield County, Colorado
North Parachute Ranch**

Dear Mr. Hines:

LT Environmental, Inc. (LTE), under the direction of Encana Oil and Gas, Inc. (Encana), has been conducting remedial action activities at the I30 Pad (Site) located within the North Parachute Ranch in Garfield County, Colorado. This correspondence is a summary of the remediation activities completed to date.

Remediation System Description, Operations and Maintenance

From September 11, 2013 through September 17, 2013, LTE installed six passive soil vapor extraction (SVE) wells at depths ranging from 34 to 44 feet below ground surface associated within a historical production pit. Vent turbines were secured to the top of five SVE wells for the purpose of remediating residual hydrocarbon concentrations.

Monthly measurements of flow, temperature, and gas concentrations are collected at each SVE well. Measurements are not collected during winter months under the assumption that microbial activity is dormant in cold conditions. A Site Diagram (Attachment A) has been included along with a summary of these measurements presented as Table 1. Attachment B graphically illustrates the gas concentrations of each SVE well.

Summary and Conclusions

LTE, under the direction of Encana, will resume monthly site visits in April, 2015 to collect measurements from the SVE wells. As gas concentrations stabilize, LTE will evaluate conditions with the goal of obtaining analytical results in compliance with applicable COGCC Table 910-1 allowable concentrations standards.



LTE appreciates the opportunity to provide environmental services to Encana. Please call us at 970-285-9985 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "Chris McKisson".

Chris McKisson
Project Manager

A handwritten signature in blue ink, appearing to read "Gavin Casson".

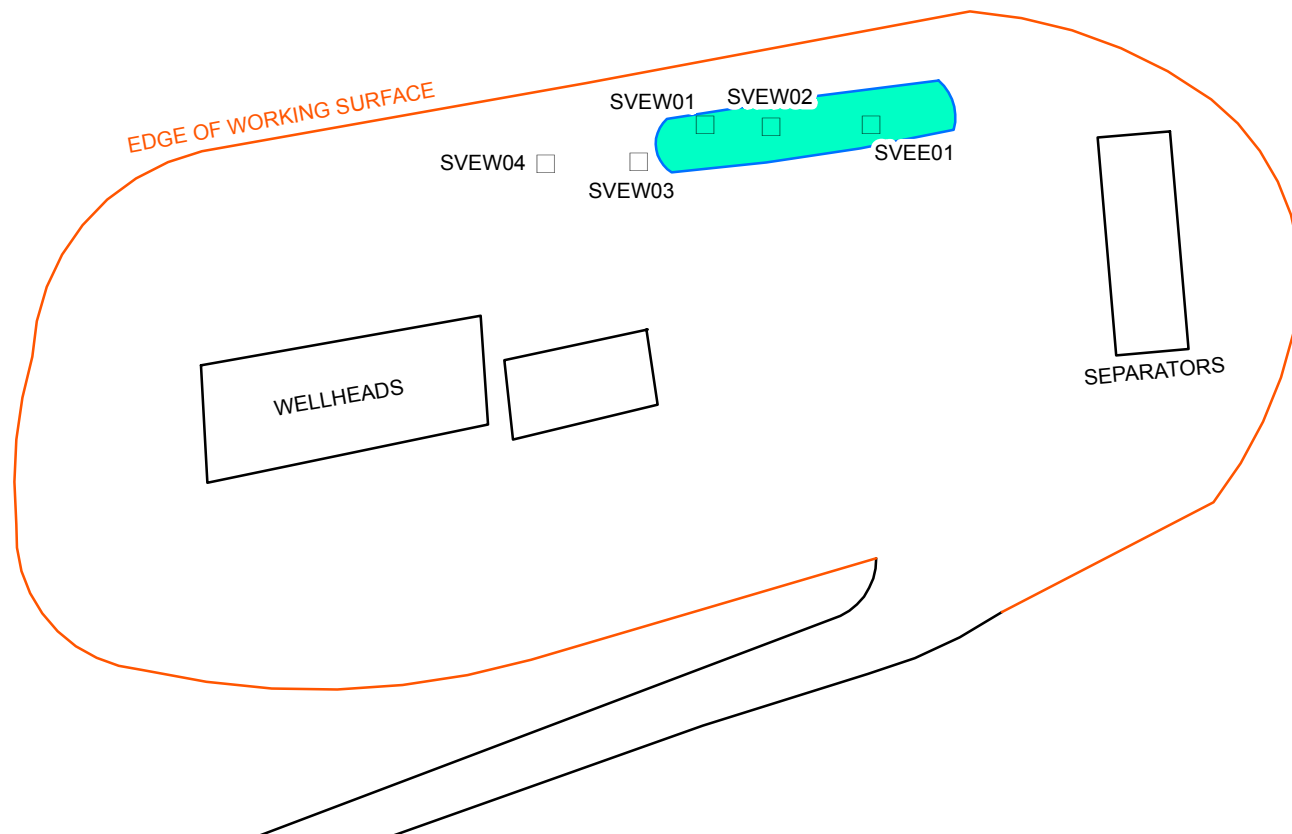
Gavin Casson, E.I.T.
Staff Engineer

Attachments

Attachment A:	Site Diagram
Attachment B:	Gas Concentration Graphs
Table 1:	SVE Operation and Maintenance Field Parameters

ATTACHMENT A
SITE DIAGRAM

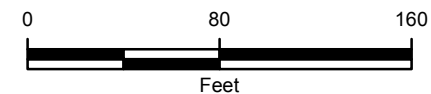




LEGEND

□ SOIL VAPOR EXTRACTION WELL

■ PIT BOUNDARY



SITE DIAGRAM
I30
GARFIELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.

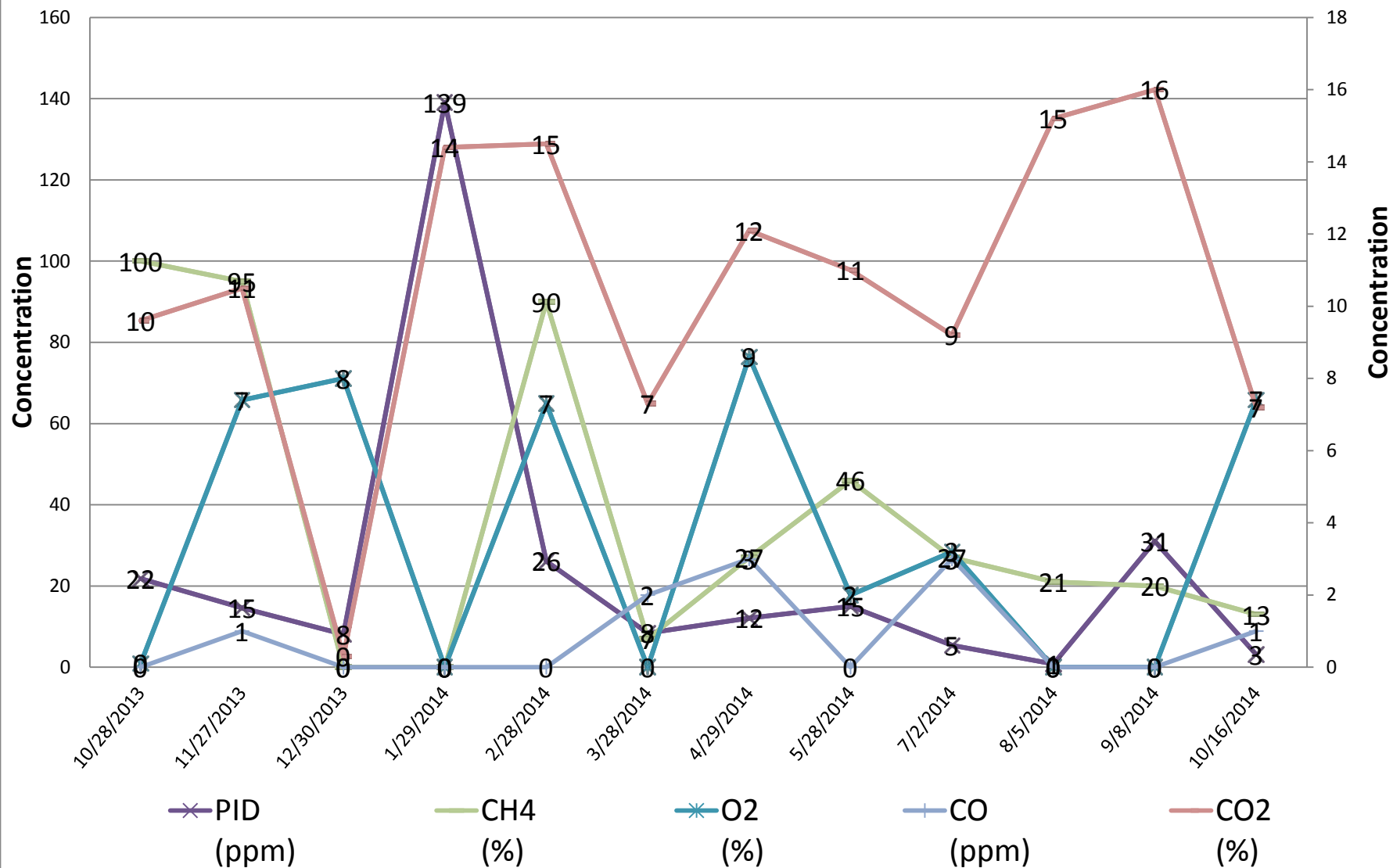


ATTACHMENT B
GAS CONCENTRATION GRAPHS



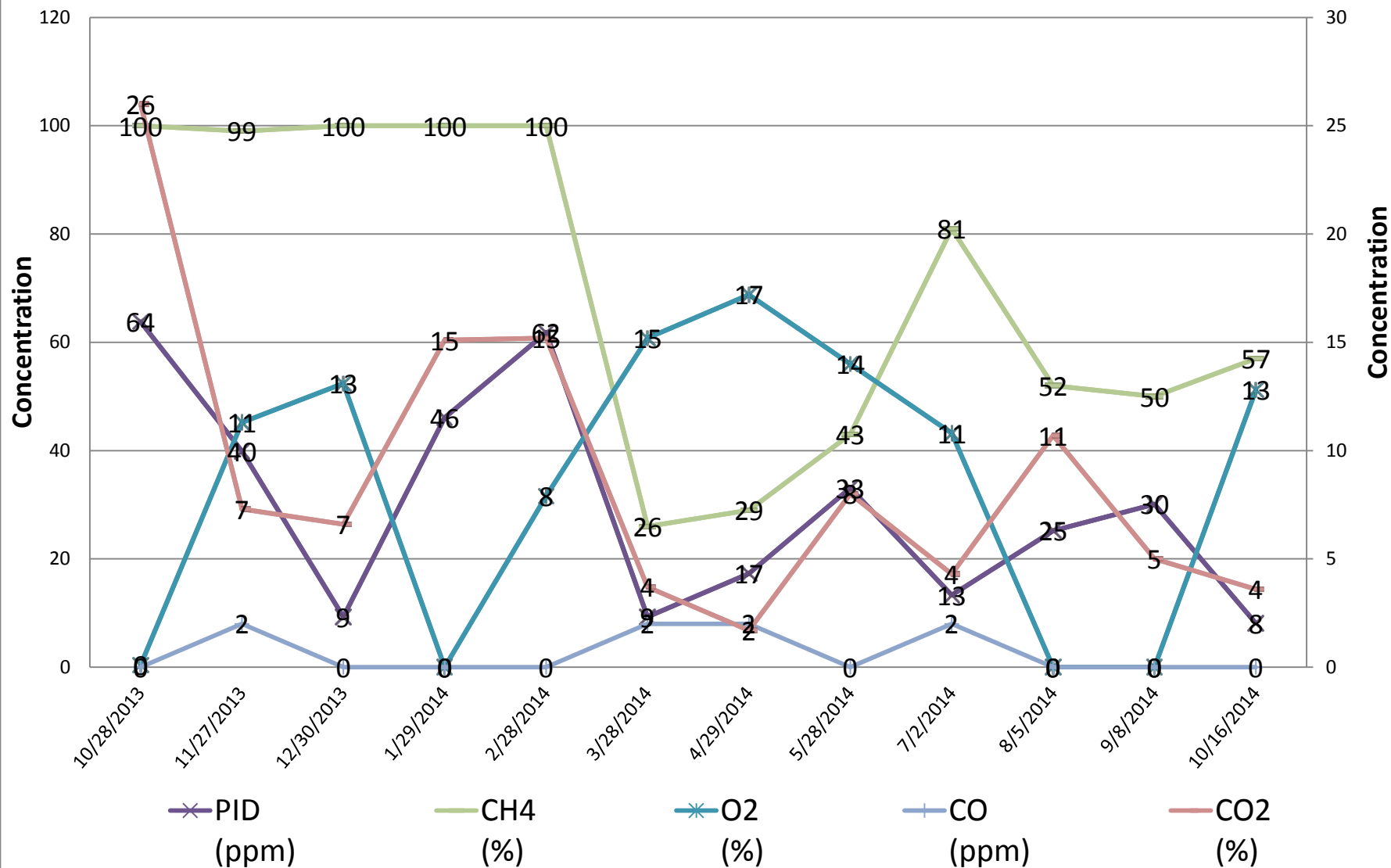
Encana I30 Pad
SVEW04

Assessed TPH: 0.0 mg/kg



Encana I30 Pad
SVEW03

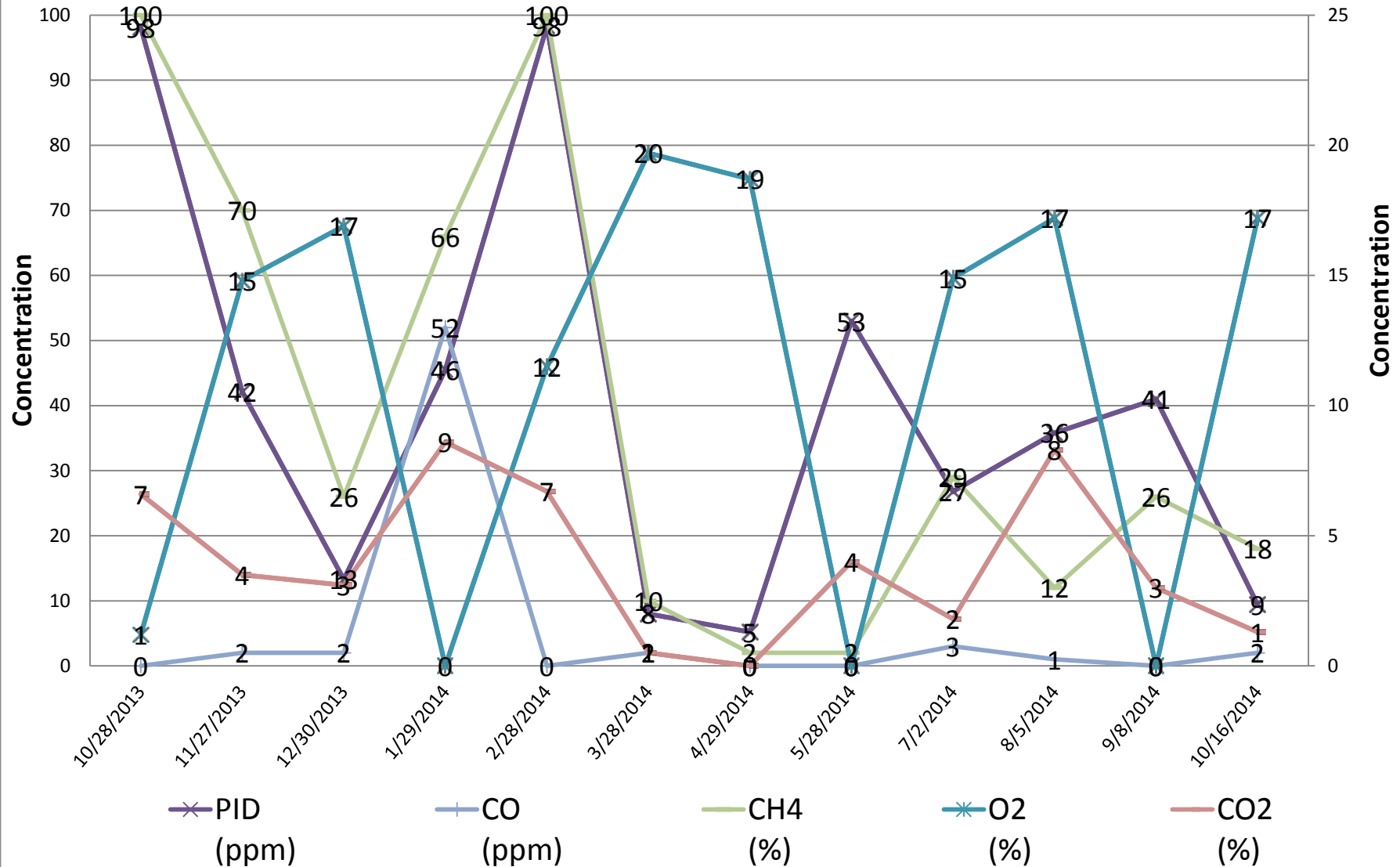
Assessed TPH: 691mg/kg



Encana I30 Pad

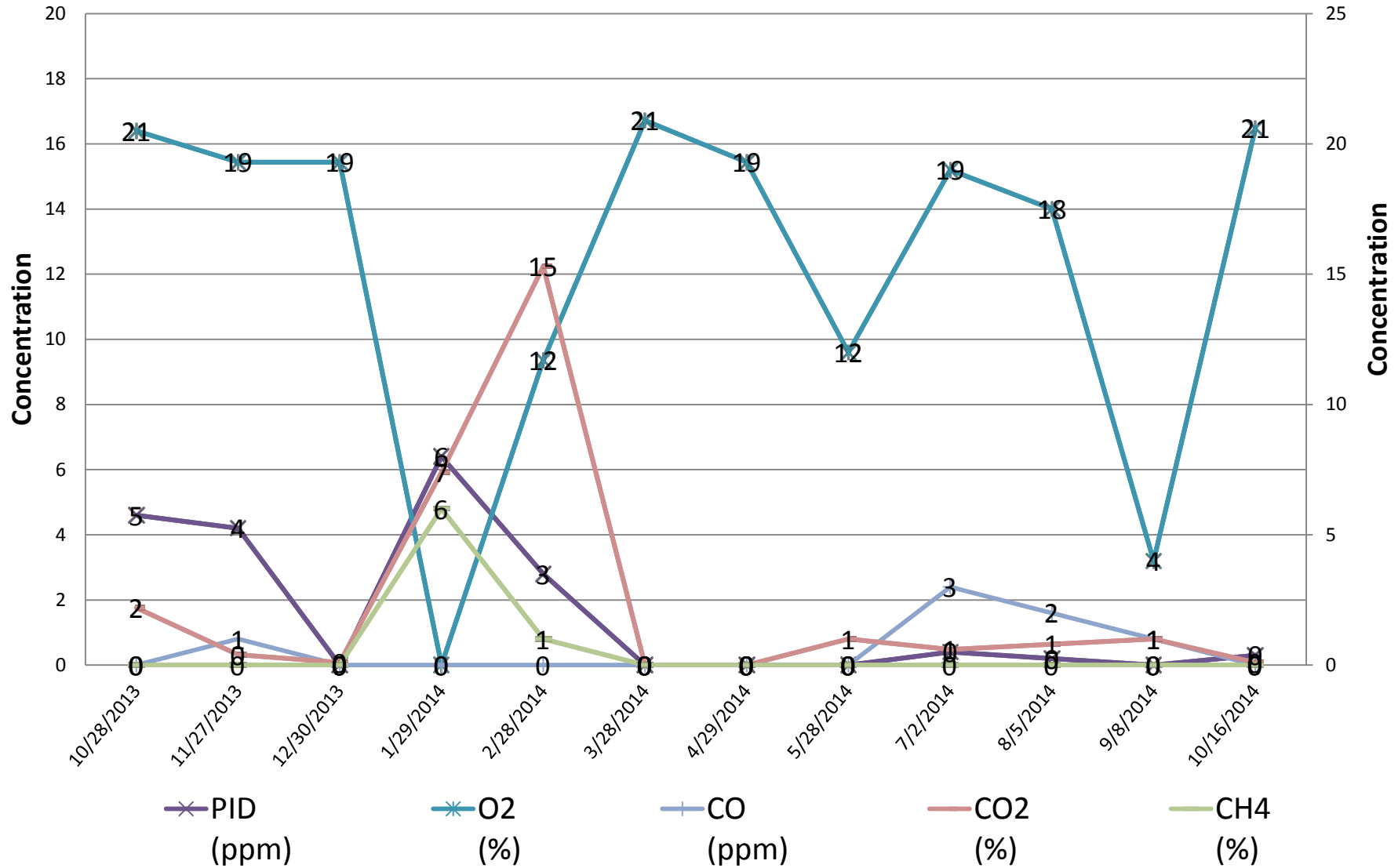
SVEW01

Assessed TPH: 3,730 mg/kg



**Encana I30 Pad
SVEW02**

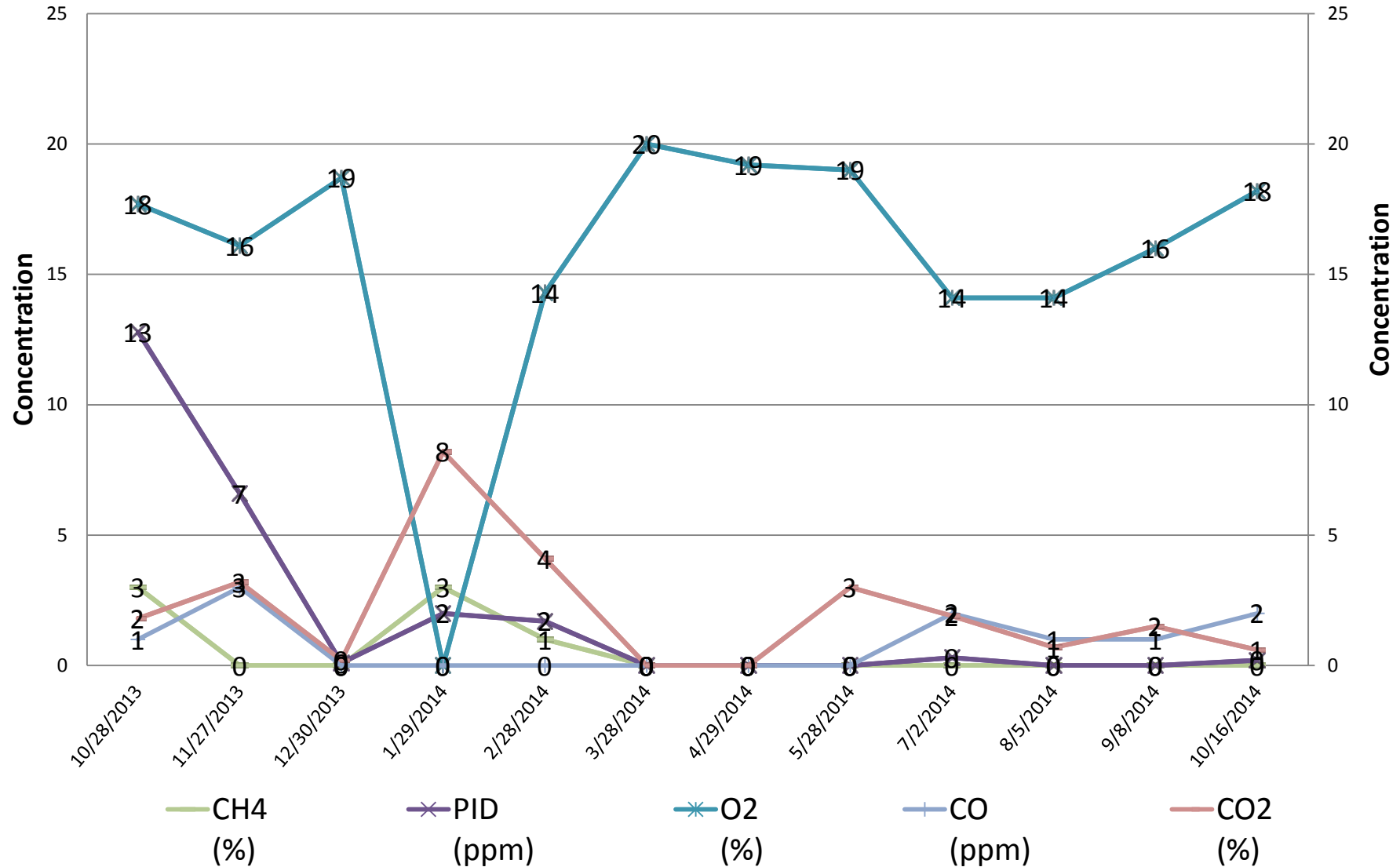
Assessed TPH: 4,120 mg/kg



Encana I30 Pad

SVEE01

Assessed TPH: 260 mg/kg



TABLES

Table 1
Operation and Maintenance Field Parameters
I30 Well Pad
Encana Oil & Gas (USA) Inc.
Garfield County, Colorado

Well ID	Date	Velocity (fpm)	Flow (cfm)	Temperature (°F)	PID (ppm)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	CO ₂ (%)	CH ₄ (%)	*TPH mg/kg
SVEW04	10/28/2013	41	0.720	67.1	21.8	0.1	0	0	9.6	>100	ND
	11/27/2013	17	0.545	30.5	14.6	7.4	0	1	10.5	95	
	12/30/2013	34	0.720	30.0	8.1	8	0	0	0.3	0	
	1/29/2014	1	0.0218	41.4	139	0.0	0	0	14.4	60	
	2/28/2014	15	0.545	50.3	26.1	7.3	0	0	14.5	90	
	3/28/2014	8	0.0346	57.8	8.4	0.0	0	2	7.3	7	
	4/29/2014	28	0.417	62.8	12.1	8.6	0	3	12.1	27	
	5/28/2014	2	0.0436	96.2	14.7	2.2	0	0	11.0	46	
	7/2/2014	74	1.33	96.5	5.4	3.2	0	3	9.2	27	
	8/5/2014	4	0.0655	87.9	0.8	0.0	0	0	15.2	21	
	9/8/2014	3	0.0436	85.4	31	0.0	0	0	16.2	20	
	10/16/2014	8	0.196	83.8	3.1	7.4	0	1	7.2	13	
SVEW03	10/28/2013	40	0.590	65.9	63.8	0.1	0	0	26	>100	691
	11/27/2013	9	0.107	22.3	39.9	11.3	0	2	7.3	99	
	12/30/2013	32	0.675	30.5	9.3	13.1	0	0	6.6	>100	
	1/29/2014	0.1	0.0218	41.2	46.1	0	0	0	15.1	>100	
	2/28/2014	32	0.500	50.0	61.8	7.9	0	0	15.2	>100	
	3/28/2014	24	0.284	57.6	9.3	15.2	0	2	3.7	26	
	4/29/2014	34	0.500	51.9	17.3	17.2	0	2	1.7	29	
	5/28/2014	11	0.109	95.4	33.1	14.1	0	0	8.4	43	
	7/2/2014	40	0.512	102.5	13.3	10.8	0	2	4.3	81	
	8/5/2014	23	0.545	86.9	25.2	0.0	0	0	10.7	52	
	9/8/2014	8	0.153	87.1	30.1	0.0	0	0	4.6	50	
	10/16/2014	22	0.726	85.4	8.1	12.8	0	0	3.6	57	
SVEW01	10/28/2013	22	0.726	65.9	98.1	1.2	0	0	6.6	>100	3,730
	11/27/2013	21	0.545	29.0	42.1	14.8	0	2	3.5	70	
	12/30/2013	27	0.590	29.7	13.3	16.9	0	2	3.1	26	
	1/29/2014	0	0.000	41.4	45.5	0.0	0	52	8.6	66	
	2/28/2014	27	0.573	52.1	98.3	11.5	0	0	6.7	>100	
	3/28/2014	16	0.305	54.3	7.5	19.7	0	2	0.5	10	
	4/29/2014	32	0.550	49.7	5.2	18.7	0	0	0.0	2	
	5/28/2014	8	0.196	96.2	53.0	0.0	0	0	4.0	2	
	7/2/2014	30	0.610	100.5	26.8	14.9	0	3	1.8	29	
	8/5/2014	26	0.525	87.7	35.8	17.2	0	1	8.3	12	
	9/8/2014	1	0.0218	86.9	40.7	0.0	0	0	3.0	26	
	10/16/2014	22	0.480	85.4	9.4	17.2	0	2	1.3	18	

Table 1
Operation and Maintenance Field Parameters
I30 Well Pad
Encana Oil & Gas (USA) Inc.
Garfield County, Colorado

Well ID	Date	Velocity (fpm)	Flow (cfm)	Temperature (°F)	PID (ppm)	O ₂ (%)	H ₂ S (ppm)	CO (ppm)	CO ₂ (%)	CH ₄ (%)	*TPH mg/kg
SVEW02	10/28/2013	92	2.33	66.4	4.6	20.5	0	0	2.2	0	4,120
	11/27/2013	8	0.262	23.8	4.2	19.3	0	1	0.4	0	
	12/30/2013	12	0.284	32.1	0	19.3	0	0	0.1	0	
	1/29/2014	1	0.0218	42.8	0.4	0.0	0	0	7.4	6	
	2/28/2014	9	0.103	51.9	2.8	11.7	0	0	15.3	1	
	3/28/2014	5	0.0436	57.2	0.0	20.9	0	0	0.0	0	
	4/29/2014	27	0.590	52.6	0.0	19.3	0	0	0.0	0	
	5/28/2014	33	0.610	96.4	0.4	11.6	0	0	1.4	0	
	7/2/2014	24	0.648	94.5	0.4	19.0	0	3	0.6	0	
	8/5/2014	24	0.545	87.1	0.2	17.5	0	2	0.8	0	
	9/8/2014	28	0.740	86.1	0.0	3.8	0	1	0.7	0	
	10/16/2014	27	0.610	84.9	0.3	20.6	0	0	0.1	0	
SVEE01	10/28/2013	41	1.440	66.7	12.8	17.7	0	1	1.8	3	260
	11/27/2013	27	0.655	27.3	6.6	16.1	0	3	3.2	0	
	12/30/2013	10	0.875	36.7	0.1	18.7	0	0	0.2	0	
	1/29/2014	1	0.0218	44.2	2	0	0	0	8.2	3	
	2/28/2014	12	0.301	50.9	1.7	14.3	0	0	4.1	1	
	3/28/2014	1	0.0218	66.5	0.0	20.0	0	0	0.3	0	
	4/29/2014	22	0.590	50.1	0.0	19.2	0	0	0.0	0	
	5/28/2014	27	0.525	98.5	0.1	18.6	0	0	3.2	0	
	7/2/2014	49	0.540	99.9	0.3	14.1	0	2	1.9	0	
	8/5/2014	26	0.500	88.5	0.0	14.1	0	1	0.7	0	
	9/8/2014	31	0.635	88.9	0.0	15.7	0	1	1.5	0	
	10/16/2014	22	0.590	83.9	0.2	18.2	0	2	0.6	0	

Notes:

fpm - feet per minute

cfm - cubic feet per minute

TPH - total petroleum hydrocarbons

mg/kg - milligrams per kilogram

PID - photoionization detector

ppm - parts per million

O₂ - oxygen

H₂S - hydrogen sulfide

CO - carbon monoxide

CO₂ - carbon dioxide

CH₄ - methane

°F - degrees fahrenheit

* - TPH values indicate concentrations in soil at time of well installation.

ND - Non Detect