



AIR QUALITY MONITOR REPORT

Provided For

ASL NO FLAME HEATERS

OCTOBER 16 , 2009.

Prepared By

TROJAN SAFETY / A.I.R. Monitors

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INTRODUCTION

A.I.R. MONITORS PERFORMED AN AIR QUALITY ASSESSMENT

FOR: ASL NO FLAME HEATERS

REQUESTED BY: RANDY RYKS

A.I.R. OPERATOR: DEREK KOEBEL

AT: TROJAN SAFETY COMPOUND

SAMPLING WAS CARRIED OUT AT THE TROJAN SAFETY COMPOUND IN CLAIRMONT, AB, USING A MOBILE AIR QUALITY MONITORING UNIT.

METHODS OF DATA COLLECTION

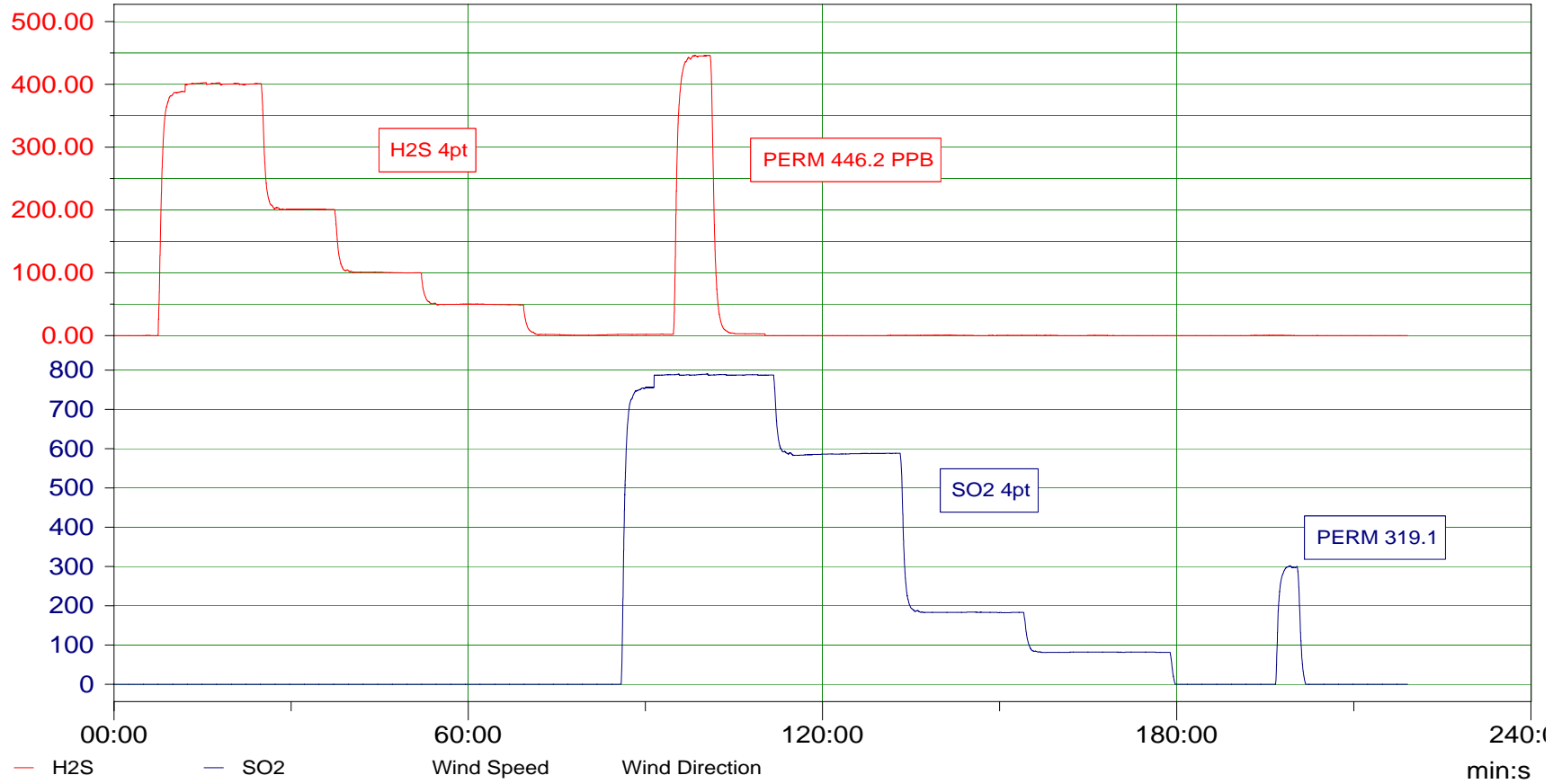
THE SURVEY WAS PERFORMED BY A.I.R. MONITORS' UNIT 104. UNIT CAPABILITIES ARE AS FOLLOWS:

- | | | |
|-----------|--------------------------|-----------------------------------|
| 1: | HYDROGEN SULPHIDE | (0 – 20,000 PPB) |
| 2: | SULPHUR DIOXIDE | (0 – 20,000 PPB) |
| 3: | WIND SPEED | (0 – 200 KM/HR) |
| 4: | WIND DIRECTION | (0 – 360 DEG./AZIMUTH) |
| 5: | TEMPERATURE | (-50 - +50 DEG. CELSIUS) |

ALL SAMPLES WERE TAKEN 3.4 METERS ABOVE GROUND LEVEL, DATA WAS RECORDED CONTINUOUSLY THROUGHOUT THE SURVEY BY AN ONBOARD COMPUTER AND BACKED UP BY A CS 100 (Campbell Scientific) DATA LOGGER WITH 2 SECONDARY BACK UPS TO AN API 101 (Advanced Pollution Instrumentation) DATA UNIT. DISTANCES AND POSITIONS OF THE MONITORING UNIT WERE OBSERVED AND LOGGED BY THE GLOBAL POSITIONING SYSTEM AFTER EACH RELOCATION.

DYNAMIC CALLIBRATIONS OF THE H₂S AND SO₂ ANALYZERS ARE PERFORMED AT MONTHLY INTERVALS (MINIMUM) AND/OR BEFORE JOB START UP. (As per Alberta Air Monitoring Directives)

AIR Monitors Calibration Sheet





SUMMARY

EQUIPMENT AND PERSONNEL

UNIT NO. 104
FIELD TECHNICIAN DEREK KOEBEL

ALBERTA CLEAN AIR ACT LIMITS:

H2S 10 PPB PER HOUR and 3 PPB PER 24 HOUR
SO2 170 PPB PER HOUR and 57 PPB PER 24 HOUR

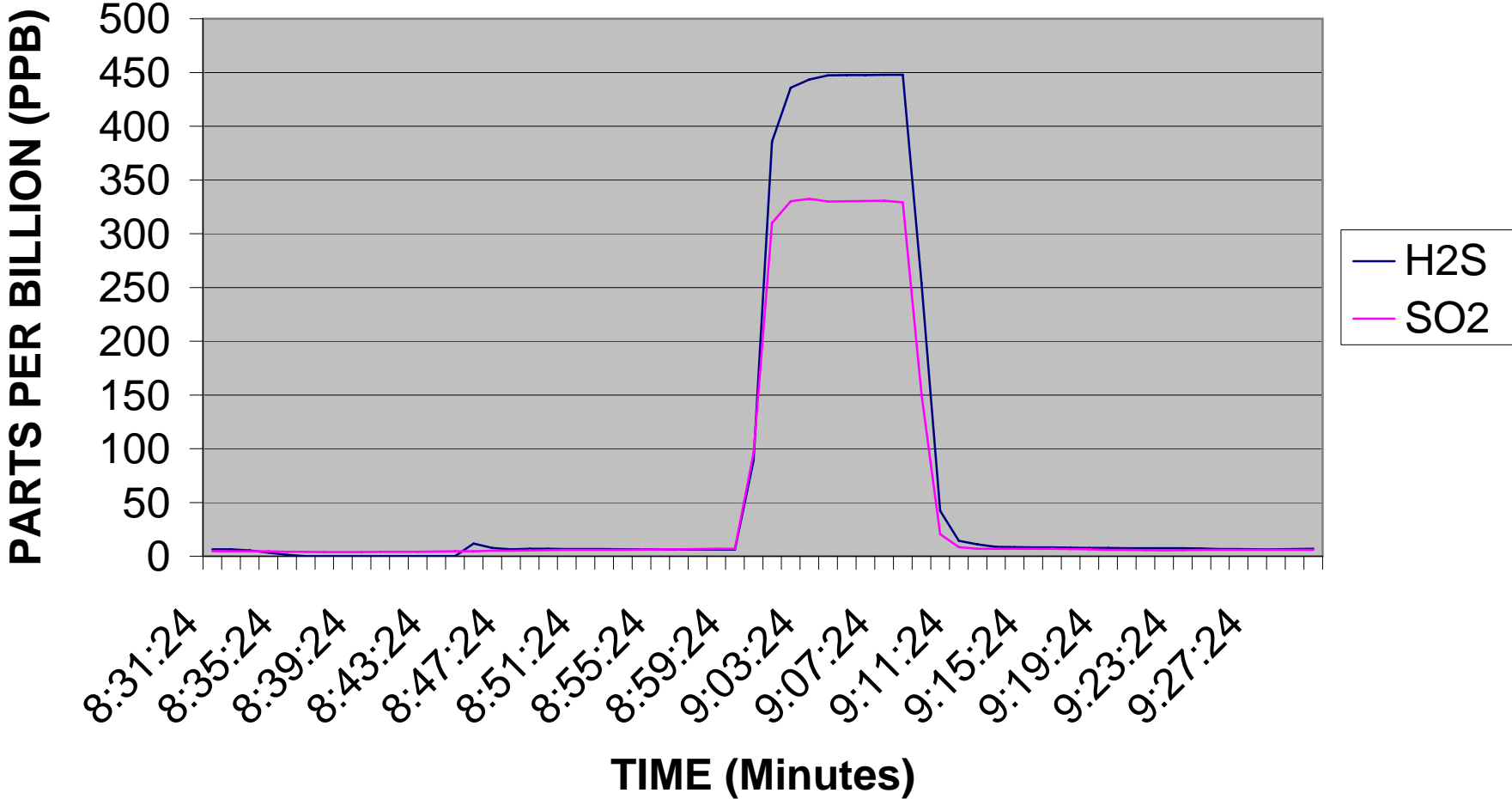
EXCEEDENCE: **H2S NO**
 SO2 NO

COMMENTS:

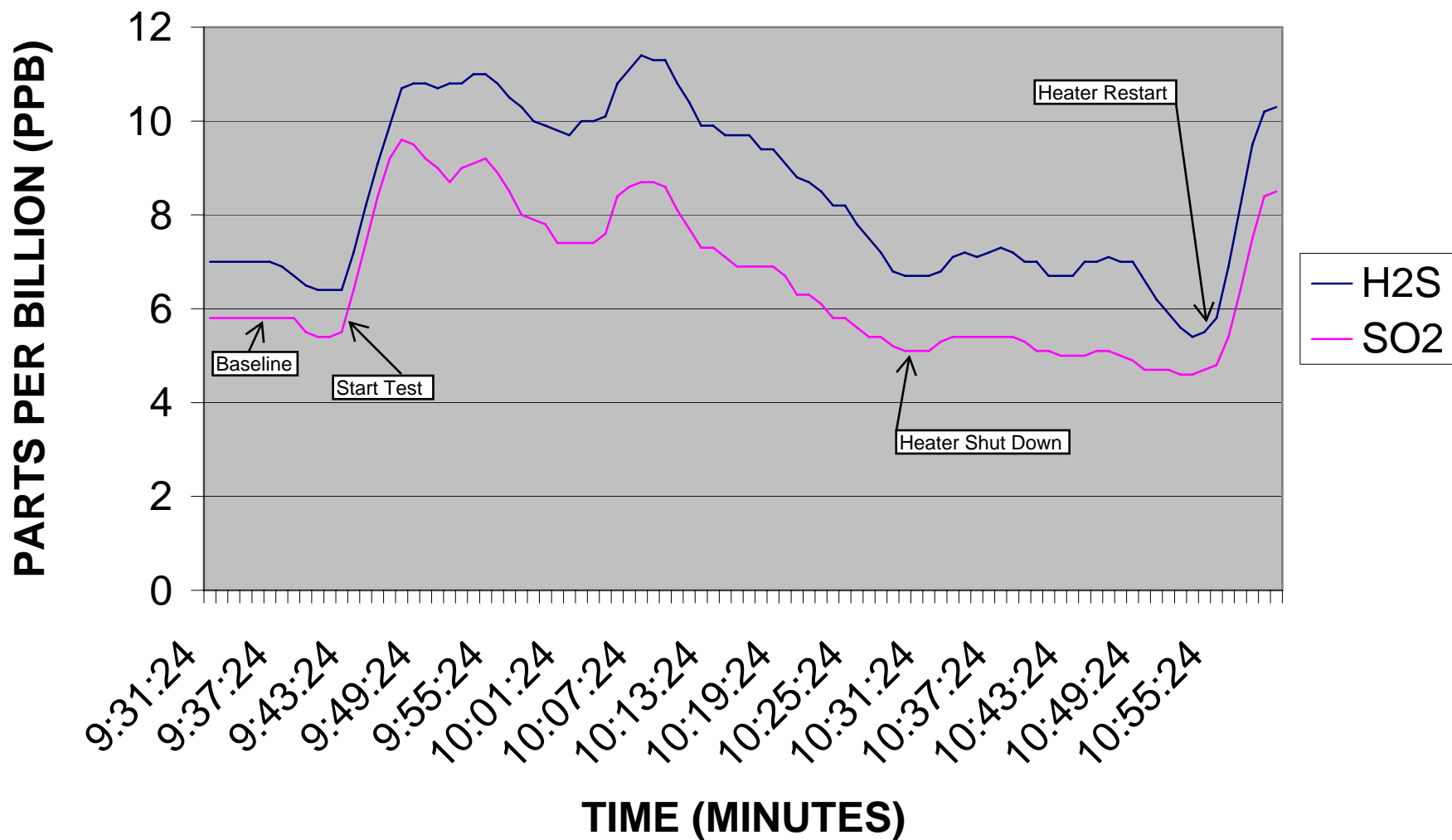
On October 16, 2009, AIR Monitors performed an emission test on an ASL No Flame Heater. Continuous samples were taken directly from the heater's outlet. Throughout the course of the test, H2S and SO2 levels increased by 4 – 6 ppb while the heater was operating at normal capacity. Baseline / background readings averaged between 4 and 7 ppb for both H2S and SO2. The peak readings recorded from the test were 11.4ppb (H2S) and 9.6ppb (SO2).

Alberta clean air act limits are set for ambient or off site emission levels. On site exposure limits are substantially higher.

NO FLAME HEATER EMISSION TEST: Baseline and Analyzer Check



NO FLAME HEATER EMISSION TEST



BASELINE READINGS / ANALYZER CHECK

Time	H2S	SO2
8:31:24	6.3	4.5
8:32:24	6.3	4.7
8:33:24	5.3	4.5
8:34:24	3.4	4.5
8:35:24	1.3	4.2
8:36:24	0.1	4.1
8:37:24	0.1	3.9
8:38:24	0.1	3.9
8:39:24	0.1	3.9
8:40:24	0.1	4.2
8:41:24	0.1	4.2
8:42:24	0.1	4.2
8:43:24	0.1	4.4
8:44:24	0.1	4.5
8:45:24	11.8	4.7
8:46:24	7.8	5
8:47:24	6.4	5.1
8:48:24	7	5.4
8:49:24	6.9	5.7
8:50:24	6.7	5.8
8:51:24	6.7	5.8
8:52:24	6.7	5.8
8:53:24	6.5	5.8
8:54:24	6.5	6.2
8:55:24	6.4	6.3
8:56:24	6.2	6.3
8:57:24	6.2	6.7
8:58:24	6.2	6.9
8:59:24	6.2	6.9
9:00:24	89.3	96.4
9:01:24	385.6	310
9:02:24	435.8	330.3
9:03:24	443.5	332.5
9:04:24	447.2	330
9:05:24	447.6	330.2
9:06:24	447.6	330.5
9:07:24	447.9	330.7
9:08:24	447.8	329.1
9:09:24	254.6	150.8

Time	H2S	SO2
9:10:24	42.1	20.4
9:11:24	14.4	8.4
9:12:24	10.9	6.9
9:13:24	8.6	6.9
9:14:24	8.5	6.9
9:15:24	8.3	6.9
9:16:24	8.1	6.9
9:17:24	7.9	6.7
9:18:24	7.6	6.3
9:19:24	7.6	5.8
9:20:24	7.5	5.8
9:21:24	7.3	5.7
9:22:24	7.4	5.4
9:23:24	7.3	5.6
9:24:24	7.1	5.8
9:25:24	6.7	5.8
9:26:24	6.7	5.8
9:27:24	6.5	5.8
9:28:24	6.5	5.8
9:29:24	6.7	5.8
9:30:24	6.8	5.8

DATA FOR EMISSION TEST

Time	H2S	SO2
9:31:24	7	5.8
9:32:24	7	5.8
9:33:24	7	5.8
9:34:24	7	5.8
9:35:24	7	5.8
9:36:24	7	5.8
9:37:24	6.9	5.8
9:38:24	6.7	5.8
9:39:24	6.5	5.5
9:40:24	6.4	5.4
9:41:24	6.4	5.4
9:42:24	6.4	5.5
9:43:24	7.2	6.4
9:44:24	8.2	7.4
9:45:24	9.1	8.4
9:46:24	9.9	9.2
9:47:24	10.7	9.6
9:48:24	10.8	9.5
9:49:24	10.8	9.2
9:50:24	10.7	9
9:51:24	10.8	8.7
9:52:24	10.8	9
9:53:24	11	9.1
9:54:24	11	9.2
9:55:24	10.8	8.9
9:56:24	10.5	8.5
9:57:24	10.3	8
9:58:24	10	7.9
9:59:24	9.9	7.8
10:00:24	9.8	7.4
10:01:24	9.7	7.4
10:02:24	10	7.4
10:03:24	10	7.4
10:04:24	10.1	7.6
10:05:24	10.8	8.4
10:06:24	11.1	8.6
10:07:24	11.4	8.7
10:08:24	11.3	8.7
10:09:24	11.3	8.6
10:10:24	10.8	8.1
10:11:24	10.4	7.7
10:12:24	9.9	7.3
10:13:24	9.9	7.3
10:14:24	9.7	7.1
10:15:24	9.7	6.9
10:16:24	9.7	6.9

Time	H2S	SO2
10:17:24	9.4	6.9
10:18:24	9.4	6.9
10:19:24	9.1	6.7
10:20:24	8.8	6.3
10:21:24	8.7	6.3
10:22:24	8.5	6.1
10:23:24	8.2	5.8
10:24:24	8.2	5.8
10:25:24	7.8	5.6
10:26:24	7.5	5.4
10:27:24	7.2	5.4
10:28:24	6.8	5.2
10:29:24	6.7	5.1
10:30:24	6.7	5.1
10:31:24	6.7	5.1
10:32:24	6.8	5.3
10:33:24	7.1	5.4
10:34:24	7.2	5.4
10:35:24	7.1	5.4
10:36:24	7.2	5.4
10:37:24	7.3	5.4
10:38:24	7.2	5.4
10:39:24	7	5.3
10:40:24	7	5.1
10:41:24	6.7	5.1
10:42:24	6.7	5
10:43:24	6.7	5
10:44:24	7	5
10:45:24	7	5.1
10:46:24	7.1	5.1
10:47:24	7	5
10:48:24	7	4.9
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10:55:24	5.8	4.8
10:56:24	6.9	5.4
10:57:24	8.2	6.4
10:58:24	9.5	7.5
10:59:24	10.2	8.4
11:00:24	10.3	8.5
11:01:24	9.8	8
11:02:24	9.4	7.4