

ATTACHMENT 35 – *ENBRIDGE AIR MONITORING RECORDS, JULY 27 – 29, 2010*

- MONITORING B & C SITES TO VERIFY BENZENE LEVELS STILL LOW & NO 1/2 MASKS REQUIRED
- REQUESTED SECTION CHIEFS ADVISE OF CONDITION CHANGES

STILL NEED
 SGUS
 FIRE EXT
 LIGHTS
ENBRIDGE

Gas Test Record Form

Temp. / Wind 70's / LIGHT Date: 7/29/10
 Permit No.: VARIOUS LOCATIONS Gas Tester: REW

Protection Level	Gas	LEL	IDLH	TLV	STEL	CEILING	Notes
No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10 % - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded

Time	Gas	LEL	IDLH	TLV	STEL	CEILING	Location
9:05 ^P	0	0	0	20.9	1.2	0	B2 - South Side
9:15	0	0	0	20.9	1.2	0	B2 - North "
9:35	0	0	0	20.9	1.2	0	B3 COLLECTION PT 1
9:50	0	0	0	20.9	1.2	0	" " " 2
10:05	0	0	0	20.9	1.2	0	B5 S SIDE FUME #1
10:15	0	0	0	20.9	1.2	0	" " " " #2
10:25	0	0	0	20.9	1.2	0	" NEW SKIMMER SITE
10:45	0	0	0	20.9	1.2	0	B4 CULVERT
11:25	0	0	0	20.9	1.2	0	C1 - TOP SIDE DAM
11:45	0	0	0	20.9	1.2	0	C3 COLLECTION SITE #1
11:50	0	0	0	20.9	1.2	0	C3 " " #2
							CURRENT SLOWING BUT STILL FAST
1:35 ^A	0	0	0	20.9	1.2	0	E4 BOAT LAUNCH
							NO INDICATION OF OIL

Notes:

1. Initial gas testing may require use of a SCBA, an air purifying respirator or an escape pack
2. All users may not be able to achieve a Fit Factor of 10000
3. LEL stands for Lower Explosive Limit
4. 1% LEL represents approximately 100 ppm PETROLEUM VAPORS

checked

ENBRIDGE

Gas Test Record Form

Temp. / Wind 70° Date: 07-29-10

Permit No.: A-1 MPO.0 Gas Tester: E. L. KELEY

Respirator Required See note 1	H ₂ S	LEL See note 3	Petroleum Vapors See note 4	OXYGEN	BENZENE	CO	COMMENTS
No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10 % - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded
TIME (local)	H ₂ S (ppm)	LEL (%)	Petroleum Vapors (ppm)	OXYGEN (%)	BENZENE (ppm)	CO (ppm)	SAMPLE LOCATION / COMMENTS
2015	0	0	0	20.9	<0.2	0	3' FROM COLLECTION DITCH UPWIND AREA
2025	0	0	0	20.9	<0.2	0	1' ABOVE CRUDE OIL UPWIND AREA
2030	0	0	0	20.9	<0.2	0	BETWEEN VAC TRUCKS AT W END OF THE COLLECTION DITCH
0350	0	0	0	20.9	>10.0	0	AT GROUND ZERO
0355	0	0	0	20.9	<10.0	0	" " "
0400	0	0	0	20.9	4.90	0	W END OF COLLECTION DITCH
0405	0	0	0	20.9	0.850	0	BACK OF VAC TRUCKS CENTER - W END OF COLLECTION DITCH
0410	0	0	0	20.9	2.43	0	BACK OF VAC TRUCK AT GROUND ZERO - 25' FROM HOLE.

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ENBRIDGE

Gas Test Record Form

Temp. / Wind 70° Date: 07-29-10
 Permit No.: C-1 mid 515 Gas Tester: E.L. KELLEY

Respirator Required See note 1	H ₂ S	LEL See note 3	Petroleum Vapors See note 4	OXYGEN	BENZENE	CO	COMMENTS
No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10 % - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded
TIME (local)	H ₂ S (ppm)	LEL (%)	Petroleum Vapors (ppm)	OXYGEN (%)	BENZENE (ppm)	CO (ppm)	SAMPLE LOCATION / COMMENTS
2215	0	0	0	20.9	<0.2	0	AT VAC TRACKS TOP OF DAM

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ENBRIDGE

Gas Test Record Form

Temp. / Wind 70°

Date: 07-29-10

Permit No.: B-1 MP 0.3

Gas Tester: E.L. KELEY

Respirator Required See note 1	H ₂ S	LEL See note 3	Petroleum Vapors See note 4	OXYGEN	BENZENE	CO	COMMENTS
No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H ₂ S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10 % - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded
TIME (local)	H ₂ S (ppm)	LEL (%)	Petroleum Vapors (ppm)	OXYGEN (%)	BENZENE (ppm)	CO (ppm)	SAMPLE LOCATION / COMMENTS
2036	0	0	0	20.9	1.24	0	BETWEEN THE PUMPS CENTER OF Rd
2042	0	0	0	20.9	1.012	0	CENTER OF Rd AT MARSHALLS SIGN

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AIR HEAVY - THICK

SMELL STRONG LEAK SITE THRU Kalamazoo RIVER



Gas Test Record Form

Temp. / Wind 70's / NEGLIGIBLE Date: 7/27/10
 Permit No.: VARIOUS LOCATIONS Gas Tester: REW

No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10% - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded

8:45 ^P	3	4	~400	20.9	3.6	0	SWAMPY FIELD NEAR LEAK SITE
8:55 ^P	2	4	~400	20.9	2.76	0	FLUME NEAR LEAK SITE
9:15	0	1	~100	20.8	2.86	0	DIVISION ST - S SIDE
9:20	0	0	0	20.9	1.79	0	" " - N SIDE
9:45	0	0	0	20.9	2.21	0	16 MI RD. NEAR FREEWAY
10:00 ^P	0	0	0	20.9	1.22	0	15 1/2 MI RD - OIL ON LAWN
10:15	1	1	~100	20.7	2.52	0	A DRIVE - S SIDE
10:25	0	3	~300	20.9	2.19	0	A DRIVE - N SIDE KALAMAZOO RIVER
10:30	0	0	0	20.9	2.60	0	A DRIVE - N SIDE - PONTON
1:30 ^A	2	2	~200	20.9	3.94	0	NEAR LEAK SITE
1:40	5	4	~400	20.6	5.37	0	" " " NO ONE ON SITE
1:55 ^A	3	3	~300	20.8	3.17	0	FLUME NEAR LEAK SITE
2:00	4	1	~100	20.9	4.48	0	UPSTREAM LEAK SITE FLUME
2:10	5	6	~600	20.8	3.77	0	DOWNSTREAM LEAK SITE FLUME
2:30 ^A	1	0	0	20.9	3.26	0	DIVISION ST S SIDE
2:40 ^A	0	2	~200	20.9	2.46	0	DIVISION ST N SIDE
3:00	0	0	0	20.9	1.9	0	16 MI RD - UPSTREAM SITE

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HALF MASK - ALL LOCATIONS



Gas Test Record Form

Temp. / Wind 70's / NEGLIGIBLE Date: 7/27/10
 Permit No.: VARIOUS LOCATIONS Gas Tester: Rew

Level of Protection	Hydrocarbon (ppm)	LEL (%)	CO (ppm)	CO2 (%)	NO2 (ppm)	H2S (ppm)	Remarks
No Protection Required	<10 ppm	0%-3 %	< 300 ppm	>19.5 % - <23.5 %	<0.5 ppm	<25 ppm	If any one level is exceeded step-up to next level of protection
Half Mask Respirator (fit factor=10)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>0.5 ppm - 5 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
Full Face Respirator (fit factor=50)	<10 ppm	>3% - <10%	300 ppm - <1000 ppm	>19.5 % - <23.5 %	>5 ppm - 25 ppm		If any one level is exceeded step-up to next level of protection (Cartridge approved for organic vapors and H2S escape required)
SCBA (fit factor=1000) see note 2	10 ppm - 100 ppm	10 % - 20%	1000 ppm - 2000 ppm	16.0% - 19.5% (max. 23.5%)	>25 ppm - 100 ppm	>25 ppm	SHUT DOWN JOB if any one level is exceeded

Time	Hydrocarbon (ppm)	LEL (%)	CO (ppm)	CO2 (%)	NO2 (ppm)	H2S (ppm)	Remarks
3:10 A	0	0	0	20.9	2.34	0	1/2 mi. Ro. Downstream Boon
3:20	0	0	0	20.9	1.88	0	1 1/2 mi. Ro
3:35	0	2	~200	20.9	2.56	0	A DRIVE S. SIDE OF RO
3:40	0	2	~200	20.9	2.89	0	A DRIVE WOODEN BRIDGE
3:45	0	0	0	20.9	1.44	0	POHSDON IN KALAMAZOO DRIVE FAST CURRENT GOING UNDER BOON - HARD TO SEE IN DARK

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