Sanders Initials

CON 12-15 Doc # 10546

Mr. Bob Drustrup Contaminated Sites Section Iowa Dept. of Natural Resources Wallace State Office Building Des Moines, IA 50319 July 21, 2004

Subject:

Submittal of the Quarterly Status Report for Free Product Recovery

Former MacMillan Oil Site, 4306 NW 2nd Avenue, Des Moines, Iowa

Dear Mr. Drustrup:

Seneca Environmental Services is pleased to submit the Quarterly Status Report for the above referenced project for the 2nd Quarter of 2004. This report is meant to satisfy the reporting requirements as described in the Addendum to the Final Work Plan dated August 20, 2002, and IDNR response letter to the Addendum dated September 16, 2002. The active free product recovery system at this site has been temporarily shut down as of August 22, 2002. Free product recovery by hand bailing has been performed since this time, and on-site monitoring wells and nearby Wafley Creek are visually monitored. A revised monitoring schedule was approved and was initiated in July 2003, including: monthly product recovery, monthly inspection of Wafley Creek, quarterly creek samples, and quarterly status reports.

Free product has not previously been detected leaching from bank of Wafley Creek during visual inspections. Monthly product recovery by hand bailing during April through June 2004 yielded approximately 0.7 gallon of product. Free product is normally recovered from monitoring wells MW2 and MW3, and recovery wells RW2, RW3, and RW4. Due to the discovery of product in MW1, MW7 and MW9 in July 2003 during annual groundwater sampling, these wells have been added to the monthly recovery protocol.

Soak Ease adsorbent socks have been used for free product recovery from all regularly monitored wells. Installation entails tying nylon string to one end of the soak ease and lowering it into the well until the wick is within the product. The nylon line is secured and the manway is closed. Recovery entails recovering the Soak Ease from the well, removing the adsorbed product from the Soak Ease, and recovering the liquid for volume measurement. If additional free product is found during scheduled free product checks, manual bailing or skimming procedures will be used.

Surface water samples are collected from three monitoring points along Wafley Creek and sent to a certified laboratory for OA1 (BTEX) analysis. One sample is taken on the subject property downgradient from the area containing free product (Stream A). Two upgradient samples are taken as control samples to the west of the site where two forks in the creek meet. The Stream B sample is collected from the north fork of the creek (flowing from a commercial area) and Stream C sample is collected from the east fork (flowing from a residential area). Quarterly surface water samples were collected on May 27, 2004, and analytical results are

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included as an attachment. Results indicate the samples collected from Wafley Creek at Sample points A, B, and C, did not contain significant amounts of BTEX.

The entire length of Wafley Creek is inspected from the downgradient monitoring location (Stream A) to the fork; then the east fork is inspected about 30 feet upstream, and the north fork is inspected to where it flows under 2nd Avenue on the east side of the road, and where it reappears on the west side of the road north of Hoffman Lane. No non-storm water discharges were apparent along the entire length of the creek during the April and May 2004 visual observations. A slight ribbon sheen was observed in the north fork at the railroad bridge during the June 2004 observation.

If you have any questions concerning this report, please do not hesitate to contact me at 515-261-7720.

Sincerely,

cc:

Senega Environmental Services

Beth Curnes, P.E.

Chemical Engineer

Enc. Attachments

Mr. George Milligan, MacMillan Oil Company, 500 Locust Avenue, Des Moines, IA

50309

Mr. Charles Becker, Belin Law Firm, 2000 Financial Center, Des Moines, IA 50309

Seneca Project File 6213004

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FREE PRODUCT RECOVERY

Free product recovery was performed mechanically by pumping from recovery wells and treating groundwater until August 22, 2002, when the treatment system was temporarily shut down to attempt recovery by hand bailing. Based on monthly flow meter readings and estimates of free product entering the building, approximately 5 gallons of free product per month were collected by the treatment system excluding hand bailing. Approximately 40 gallons were collected over the eight-month period that the system was operating.

The attached free product recovery totals include free product recovered by hand bailing only. Site totals indicate that approximately 0.7 gallon of free product was manually recovered during the quarterly period of April through June 2004. According to monthly recovery site totals, approximately 36 gallons of product were recovered by hand bailing during the 12-month period from August 2002 through July 2003. Approximately 8 gallons of product were recovered during the 11-month period from August 2003 through June 2004.

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-1 Ground Surface Elevation: 816.21 Top of Casing Elevation: 815.97 Volume of Groundwater Static Groundwater Volume of Free Product Date Sampled Free Product Thickness Removed (gallons) Level (feet ASL) Removed (gallons) (feet) 7/14/03 808.48* 0.58 0.03 1.09 8/29/03 0.00 806.44* 0.01 0.00 10/1/03 0.01 805.95 0.00 0.13 12/22/03 0.00 807.23 0.00 0.00 1/26/04 0.00 0.00 807.85 0.00 0.00 2/26/04 808.10 0.00 0.00 3/23/04 0.00 0.00 808.15 0.00 4/13/04 0.00 0.00 0.00 808.10 5/28/04 808.04 0.00 0.00 0.00 6/27/04 807.26 0.00 0.00 0.00

*Adjusted for FP

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Well Number: MW-2 Ground Surface Elevation: 814.48 Top of Casing Elevation: 817.80

Static Groundwater Level (feet ASL) 806.02*	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
806.02*			
	0.03	0.05	0.15
805.74*	0.20		
806.58*	0.18	0.01	0.68
806.07*	0.15	<0.01	0.69
805.82*	0.16	<0.01	0.66
806.15*	0.08	<0.01	0.54
805.82*	0.11	<0.01	0.44
806.81	0.00	0.00	0.00
806.30*	0.04	0.00	0.47
805.95*	0.07	0.00	0.05
807.98*	0.01	. 0.00	0.31
806.57*	0.01	0.00	0.33
805.84*	0.05	0.00	0.37
805.82*	0.04	0.00	0.36
805.46	Sheen	0.00	0.00
805.41	Sheen	0.00	0.01
805.34	0.00	0.00	0.01
805.28	0.00	0.00	0.00
805.24	0.00	Sheen	0.01
805.23	0.00	0.00	0.00
805.17	0.00	0.001	0.00
805.08	0.00	0.001	0.02
805.04	0.00	0.00	0.00
805.57	0.00	0.00	0.00
805.41	0.00	0.00	0.16
806.03	0.00	0.00	0.02
805.79	0.00	0.00	0.02
805.97	0.00	0.00	0.01
	805.41 805.34 805.28 805.24 805.23 805.17 805.08 805.04 805.57 805.41 806.03 805.79	805.41 Sheen 805.34 0.00 805.28 0.00 805.24 0.00 805.23 0.00 805.17 0.00 805.08 0.00 805.04 0.00 805.57 0.00 805.41 0.00 806.03 0.00 805.79 0.00	805.41 Sheen 0.00 805.34 0.00 0.00 805.28 0.00 0.00 805.24 0.00 Sheen 805.23 0.00 0.00 805.17 0.00 0.001 805.08 0.00 0.001 805.04 0.00 0.00 805.57 0.00 0.00 805.41 0.00 0.00 806.03 0.00 0.00 805.79 0.00 0.00

^{*}Adjusted for FP

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-2 Ground Surface Elevation: 814.48 Top of Casing Elevation: 817.80 Static Groundwater Date Sampled ... Free Product Thickness Volume of Free Product Volume of Groundwater (feet) Removed (gallons) Level (feet ASL) Removed (gallons) 5/2/03 807.50 0.00 0.00 0.04 5/19/03 0.02 808.57 0.00 0.00 5/30/03 806.74 0.00 0.00 0.00 6/13/03 806.65 0.00 0.02 0.00 6/27/03 806.35 0.00 0.01 0.00 7/14/03 806.51 0.00 0.00 0.00 8/29/03 805.38 0.00 0.03 0.00 10/1/03 0.01 805.40 0.00 0.02 12/22/03 805.92 0.00 0.00 0.00 1/26/04 805.43 0.00 0.00 0.00 2/26/04 806.51 0.00 0.00 0.00 3/23/04 806.62 0.00 0.00 0.00 4/13/04 0.00 0.00 806.52 0.00 5/28/04 806.45 0.00 0.00 0.00 806.06 6/27/04 0.00 0.00 0.00

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-3 Ground Surface Elevation: 814.44 Top of Casing Elevation: 814.01

Date Sampled	Static Groundwater	Free Product Thickness (feet)	Volume of Free Product	Volume of Groundwater
3/20/02	806.34*	0.31	0.06	1.95
4/22/02	804.88*	0.52	0.14	0.31
7/1/02	803.94*	0.75		
8/30/02	805.04*	0.66	0.08	0.87
9/6/02	804.64*	0.52	0.03	1.84
9/13/02	804.84*	0.43	0.01	1.68
9/21/02	804.44*	0.38	0.02	1.48
9/28/02	804.36*	0.30	0.01	1.47
10/4/02	805.20*	0.38	0.03	1.42
10/11/02	804.83*	0.33	0.01	1.25
10/18/02	804.56*	0.33	0.01	0.72
10/25/02	805.02*	0.30	0.01	1.27
11/1/02	804.91*	0.34	0.02	1.25
11/11/02	804.25*	0.33	0.02	1.43
11/18/02	804.46*	0.27	0.01	1.09
11/24/02	803.89	sheen	0.06	0.00
12/6/02	803.77	0.00	0.03	0.00
12/13/02	803.89	0.00	0.04	0.00
12/20/02	803.95	0.00	0.02	0.00
12/27/02	803.88	0.00	0.01	0.00
1/3/03	803.97	0.00	0.02	0.00
1/10/03	803.82	0.00	0.02	0.00
1/24/03	803.70	0.00	0.03	0.00
2/10/03	803.67	0.00	0.03	0.00
2/24/03	803.60	0.00	0.05	0.00
3/11/03	803.77	0.00	0.03	0.00
3/21/03	804.10	0.00	0.02	0.00
4/3/03	804.27	0.00	0.01	0.01
4/17/03	804.13	0.00	0.01	0.00

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Top of Casing Elevation: 814.01

Ground Surface Elevation: 814.44

Well Number: MW-3

Date Sampled Static Groundwater Free Product Thickness Volume of Free Product | Volume of Groundwater Removed (gallons) Level (feet ASL) (feet) 5/2/03 806.12 0.01 0.02 0.00 5/19/03 805.95 0.00 0.01 0.00 5/30/03 805.69 0.00 0.01 0.00 6/13/03 805.03 0.00 0.01 0.00 6/27/03 804.85 0.00 0.02 0.00 7/14/03 805.07 sheen 0.01 0.02 8/29/03 0.06 0.85 803.93* 0.21 10/1/03 803.60 0.00 0.08 0.02 12/22/03 0.00 804.27* 0.03 0.06 0.00 1/26/04 0.00 804.28 0.00 2/26/04 804.99 0.00 0.00 0.00 3/23/04 805.28 0.00 0.00 0.00 4/13/04 0.00 0.00 804.96 0.00 5/28/04 0.00 0.00 804.83 0.00 6/27/04 812.54 0.00 0.09 0.00

*Adjusted for FP DNR Form 542-1424

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: MW-7 Ground Surface Elevation: 815.83 Top of Casing Elevation: 815.60

Well Number: MV	V-/ Ground	d Surface Elevation: 815	.83 Top of Casing	g Elevation: 815.60
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
7/14/03	806.82*	0.08	0.05	0.77
8/29/03	804.80*	0.53	0.06	0.35
10/1/03	804.58	0.00	0.09	0.00
12/22/03	805.75	0.00	0.06	0.00
1/26/04	Not Accessible			
2/26/04	805.92	0.00	0.01	0.00
3/23/04	806.27	0.00	0.02	0.00
4/13/04	805.94	0.00	0.02	0.00
5/28/04	805.77	0.00	0.03	0.00
6/27/04	805.81	0.00	0.00	0.00
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*Adjusted for FP DNR Form 542-1424

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Top of Casing Elevation: 817.37 Well Number: MW-9 Ground Surface Elevation: 817.74 Date Sampled Volume of Free Product Static Groundwater Free Product Thickness Volume of Groundwater Level (feet ASL) (feet) Removed (gallons) Removed (gallons) 809.14* 0.03 0.67 7/14/03 0.14 8/29/03 806.69* 0.75 0.07 0.30 10/1/03 806.45* 0.02 0.10 0.39 12/22/03 807.62* 0.03 0.03 0.00 0.00 1/26/04 807.61 0.00 0.03 0.03 0.00 2/26/04 807.95* 0.12 3/23/04 807.95 0.00 0.05 0.00 0.02 0.00 4/13/04 807.87 0.00 807.64* 0.06 0.00 5/28/04 0.02 0.03 0.00 6/27/04 0.00 815.90

*Adjusted for FP

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: RW-2 Ground Surface Elevation: 814.63 Top of Casing Elevation: 814.64

Well Nulliber. KW	-2 Ground	Surface Elevation. 614	.05 Top of Casing	Elevation. 614.04
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
3/20/02	799.72*	3.30	1.90	0.44
4/22/02	799.78*	3.40	1.20	0.0
7/1/02	799.92*	3.41		
8/30/02	806.51*	1.31	0.98	2.63
9/6/02	805.62*	2.01	4.20	0.0
9/13/02	805.34*	0.39	2.10	0.0
9/21/02	805.47*	0.13	0.83	0.0
9/28/02	805.44*	0.02	0.23	0.0
10/4/02	805.88*	0.02	0.27	0.0
10/11/02	805.97*	0.03	0.24	0.0
10/18/02	805.49*	0.02	0.17	0.0
10/25/02	805.79*	0.02	0.00	0.0
11/1/02	806.11*	0.01	0.12	0.0
11/11/02	805.62*	0.01	0.09	0.0
11/18/02	805.31*	0.02	0.12	0.03
11/24/02	805.10	sheen	0.00	0.00
12/6/02	804.89	0.00	0.02	0.00
12/13/02	804.86	0.00	0.04	0.00
12/20/02	804.79	0.00	0.03	0.00
12/27/02	804.71	0.00	0.02	0.00
1/3/03	804.67	0.00	0.01	0.00
1/10/03	804.65	0.00	0.02	0.00
1/24/03	804.56	0.00	0.02	0.00
2/10/03	804.58	0.00	0.02	0.00
2/24/03	805.05	0.00	0.02	0.00
3/11/03	804.96	0.00	0.02	0.00
3/21/03	805.55	0.00	0.02	0.00
4/3/03	805.57	0.00	0.01	0.00
4/17/03	805.79	0.00	0.03	0.00

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: RW-2 Ground Surface Elevation: 814.63 Top of Casing Elevation: 814.64

Well Number: RW	/-2 Ground	d Surface Elevation: 814.	Elevation: 814.64	
Date Sampled	Static Groundwater Level (feet ASL)	Free Product Thickness	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
5/2/03	807.08*	0.22	1.62	0.00
5/19/03	807.62*	0.31	1.90	0.00
5/30/03	806.50	0.00	0.02	0.00
6/13/03	806.47*	0.06	0.26	0.00
6/27/03	805.83	0.00	0.02	0.00
7/14/03	806.55*	0.21	1.04	0.00
8/29/03	804.89*	0.15	2.4	0.00
10/1/03	806.47	0.00	0.14	0.01
12/22/03	805.81*	0.02	0.23	0.00
1/26/04	805.58*	0.02	0.09	0.00
2/26/04	806.33	0.00	0.03	0.00
3/23/04	806.43	0.00	0.03	0.00
4/13/04	806.36	0.00	0.03	0.00
5/28/04	806.33	0.00	0.03	0.00
6/27/04	813.32	0.00	0.06	0.00
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Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Top of Casing Elevation: 814.85 Well Number: RW-3 Ground Surface Elevation: 814.56 Date Sampled Static Groundwater Free Product Thickness Volume of Free Product Volume of Groundwater ्रीहिंस्टर्श (feet) Removed (gallons) 🛂 Removed (gallons) Level (feet ASL) 2.03 3/20/02 805.25* 0.18 0.59 4/22/02 0.53 0.19 0.23 805.87* 7/1/02 799.13* 0.82 8/30/02 805.83* 0.23 1.21 0.48 9/6/02 805.67* 0.42 3.15 0.0 0.29 2.10 0.0 9/13/02 805.35* 9/21/02 805.65* 0.99 0.0 0.11 0.50 0.0 9/28/02 805.35* 0.06 0.37 0.0 10/4/02 806.65* 0.03 0.10 0.0 10/11/02 805.95* 0.01 10/18/02 805.52* 0.01 0.05 0.0 0.00 0.0 10/25/02 806.07* 0.03 11/1/02 0.37 0.0 806.13* 0.04 0.02 0.32 0.0 11/11/02 805.34* 11/18/02 0.19 0.0 805.36* 0.03 11/24/02 0.04 0.0 805.03 sheen 0.43 0.00 12/6/02 804.96 0.06 0.09 0.00 12/13/02 804.90 0.00 0.07 0.00 12/20/02 804.83 0.00 12/27/02 804.75 0.00 0.03 0.00 0.03 0.00 1/3/03 804.74 0.00 0.00 1/10/03 0.03 804.68 0.00 0.25 0.00 1/24/03 804.63* 0.02 0.00 2/10/03 0.13 804.62* 0.02 2/24/03 804.90* 0.01 0.09 0.00

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DNR Form 542-1424

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3/21/03

4/3/03

4/17/03

804.92

805.58

805.57

805.71

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: RW-3 Ground Surface Elevation: 814.56 Top of Casing Elevation: 814.85

Well Number: RW	er: RW-3 Ground Surface Elevation: 814.56 Top of Casing Elevat			Elevation: 814.85
Date Sampled	Static:Groundwater Level (feet ASL)	Free Product Thickness (feet)	Volume of Free Product Removed (gallons)	Volume of Groundwater Removed (gallons)
5/2/03	807.37	0.00	0.02	0.05
5/19/03	807.50	0.00	0.02	0.00
5/30/03	806.14	0.00	0.02	0.00
6/13/03	806.64	0.00	0.00	0.00
6/27/03	806.26	0.00	0.01	0.00
7/14/03	806.56	0.00	0.05	0.00
8/29/03	804.86*	0.05	1.8	0.00
10/1/03	805.12	0.00	0.11	0.01
12/22/03	805.83	0.00	0.08	0.00
1/26/04	805.85	0.00	0.06	0.00
2/26/04	806.58	0.00	0.02	0.00
3/23/04	806.70	0.00	0.03	0.00
4/13/04	806.62	0.00	0.05	0.00
5/28/04	806.56	0.00	0.05	0.00
6/27/04	805.78	0.00	0.06	0.00
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Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: R\	Well Number: RW-4		d Surface Elevation: 812.	.06	Top of Casing Elevation: 812.10	
Date Sampled	Static Groun Level (feet	dwater ASL)	Free Product Thickness (feet)	Volume of Free Product Volume of Gro Removed (gallons) Removed (g		Volume of Groundwater, Removed (gallons)
3/20/02	7.16* from		0.65	-	0.71 5.59	
7/1/02	7.28* from	TOC	0.74			
9/6/02	7.15* from	TOC	0.59		3.57	0.0
9/13/02	7.35* from	TOC	0.19		1.05	0.0
9/21/02	7.17* from	TOC	0.09		0.66	0.0
9/28/02	7.33* from	TOC	0.04		0.39	0.0
10/4/02	805.17	7*	0.01		0.05	. 0.0
10/11/02	805.03	3*	0.03		0.24	0.0
10/18/02	804.84	! *	0.02		0.08	0.0
10/25/02	805.0	6	0.00		0.00	0.0
11/1/02	805.1	3	0.00		0.00	0.0
11/11/02	804.89)*	0.01	0.04		. 0.0
11/18/02	804.77	7*	0.02		0.03	0.13
11/24/02	804.69	9	sheen		0.02	0.0
12/6/02	804.6	4	0.00		0.01	0.00
12/13/02	804.60	0	0.00	0.01		0.00
12/20/02	804.6	1	0.00		0.01	0.00
12/27/02	804.5	7	0.00		0.16	0.00
1/3/03	804.53	3*	0.08		0.72	0.00
1/10/03	804.58	3*	0.06		0.51	0.00
1/24/03	804.52	2	0.00		0.01	0.00
2/10/03	804.48	3*	0.28		2.46	0.00
2/24/03	804.83	3*	0.06		0.36	0.00
3/11/03	804.66	5*	0.04		0.32	0.00
3/22/03	805.0	1	0.00		0.07	0.00
4/3/03	804.86		0.00		0.03	0.01
4/17/03	805.02	2	0.00		0.06	0.00
				,		

*Adjusted for FP DNR Form 542-1424

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet should be used for each recovery well.

Well Number: RW-4 Ground Surface Elevation: 812.06 Top of Casing Elevation: 812.10

Well Number: RV	V-4 Ground	d Surface Elevation: 812	.06 Top of Casing	Elevation: 812.10
Date Sampled	Static Groundwater	Free Product Thickness	Volume of Free Product. Removed (gallons)	Volume of Groundwater Removed (gallons)
5/2/03	806.39	0.00	0.06	0.02
5/19/03	803.01	0.00	0.04	0.00
5/30/03	805.30	0.00	. 0.01	0.00
6/13/03	805.36	0.00	0.01	0.00
6/27/03	805.12	0.00	0.03	0.00
7/14/03	805.39	0.01	0.03	0.00
8/29/03	804.58*	0.04	0.78	0.00
10/1/03	804.75	0.00	0.05	0.00
· 12/22/03	805.12	0.00	0.05	0.00
1/26/04	805.17	0.00	0.05	0.00
2/26/04	805.72	0.00	0.03	0.00
3/23/04	805.95	0.00	0.05	0.00
4/13/04	805.77	0.00	0.06	0.00
5/28/04	805.68	0.00	0.05	0.00
6/27/04	805.08	0.00	0.02	0.00
	·			
		· · · · · · · · · · · · · · · · · · ·		

Free Product Recovery - Site Totals

Tabulate the total groundwater volume and total free product volume removed from all the recovery wells at the site. Volume of free product and groundwater recovered must be reported to the nearest 0.1 gallon. List the site totals starting with the first month the recovery was initiated. The results for all events must be provided.

	Volume of Water Recovered	
Month / Year - Gallons	Month / Year - Gallons	Month / Year - Gallons
3/02 – 10.01	7/03 – 2.55	•
4/02 – 0.69	8/03 – 1.5	
7/02 – 0.0	9-10/03 - 0.46	•
8/02 - 5.39	11-12/03 – 0.0	-
9/02 - 8.80	1/04 – 0.0	•
10/02 - 5.49	2/04 – 0.0	-
11/02 – 4.99	3/04 – 0.0	-
12/02 - 0.03	4/04 – 0.0	-
1/03 - 0.02	5/04 - 0.0	-
2/03 - 0.0	6/04 - 0.0	-
3/03 - 0:18	-	-
4/03 - 0.05	-	. -
5/03 - 0.16	-	-
6/03 - 0.01	- .	21
Vo	lume of Free Product Recover	red
Month / Year - Gallons	Month / Year - Gallons	Month / Year - Gallons
3/02 – 2.85	7/03 – 1.24	-
4/02 – 1.58	8/03 – 5.2	-
7/02 – 0.0	9-10/03 — 0.71	-
. 8/02 – 1.30	11-12/03 - 0.51	-
9/02 – 19.84	1/04 – 0.23	-
10/02 – 1.63	2/04 – 0.12	•
11/02 – 1.45	3/04 – 0.18	-
12/02 - 1.02	4/04 – 0.18	•
1/03 - 1.67	5/04 – 0.22	· •
2/03 – 3.16	6/04 - 0.26	-
3/03 – 0.57	•	-
		
4/03 - 0.21	-	-
4/03 - 0.21 5/03 - 3.75		-



ANALYTICAL REPORT

Beth Curnes SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313

06/04/2004

TestAmerica Job: 04.06925

Project Number: 6213004

Project: McMillan Oil-2nd Ave.

Enclosed is the Analytical Reports for the following samples submitted to the Cedar Falls Division of TestAmerica Analytical Testing Corporation for analysis.

Sample Number	Sample Description	Date Taken	Date Received
802356	A	05/27/2004	05/28/2004
802357	В	05/27/2004	05/28/2004
802358	C	05/27/2004	05/28/2004

TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Shawn Hayes Project Manager 704 ENTERPRISE DRIVE · CEDAR FALLS, IA 50613 · 319-277-2401 · 800-750-2401 · FAX 319-277-2425

ANALYTICAL REPORT

Page 2 of 10

Beth Curnes SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 800-369-3500 06/04/2004

Job Number: 04.06925

Sample Number: 802356

Collected by: James Carolus

Collectors Phone No.: 800-369-3500

Job Description: MCMILLAN OIL - 2ND AVE. 6213004

Date Taken: 05/27/2004

Sample ID: A

Date Received: 05/28/2004

Sample ID: A						Date Rece	e1Ved: 05/28/2004	
-		R	esult		Date		Quantitation	
<u>Analyte</u>	Result	Units	Flag A	Analyst	<u>Analyzed</u>	<u>Method</u>	Limit	<u>Matrix</u>
VOLATILES - BTEX (WATER)								
•								•
Benzene	<2.0	ug/L		mmk	06/03/2004	IA-OA1	2.0	WATER
Toluene	<2.0	ug/L		mmk	06/03/2004	IA-OA1	2.0	WATER
	•							
Ethylbenzene	<2.0	ug/L		mmk	06/03/2004	IA-OA1	2.0	WATER
							•	
Xylenes, Total	<3.0	ug/L		mmk	06/03/2004	IA-OA1	3.0	WATER
VOA Preservation pH	<2	units		dmd	06/04/2004	SW 9041A		WATER

All results are calculated on a wet weight basis.

Page 3 of 10

ANALYTICAL REPORT

06/04/2004

Job Number: 04.06925

Sample Number:

802357

Beth Curnes SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 800-369-3500

Collected by: James Carolus

Collectors Phone No.: 800-369-3500

Job Description: MCMILLAN OIL - 2ND AVE.

Date Taken: 05/27/2004

Sample ID: B Date Received: 05/28/2004 Date Quantitation Result <u>Analyte</u> Analyst Analyzed Method Limit Matrix Result Units Flag VOLATILES - BTEX (WATER) Benzene 2.0 . WATER 06/03/2004 IA-OA1 <2.0 ug/L mmk Toluene 2.0 WATER <2.0 06/03/2004 IA-OA1 ug/L mmk Ethylbenzene <2.0 06/03/2004 IA-OA1 2.0 WATER Xylenes, Total <3.0 06/03/2004 IA-OA1 3.0 WATER ug/L VOA Preservation pH 06/04/2004 SW 9041A WATER units

All results are calculated on a wet weight basis.

ANALYTICAL REPORT

Page 4 of 10

Beth Curnes SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 800-369-3500

06/04/2004

Job Number: 04.06925

Sample Number: 802358

Collected by: James Carolus

Collectors Phone No.: 800-369-3500

Job Description: MCMILLAN OIL - 2ND AVE. 6213004

Date Taken: 05/27/2004

Sample ID: C

Date Received: 05/28/2004

-								
,			Result		Date		Quantitation	
Analyte	<u>Result</u>	<u>Units</u>	Flaq	Analyst	<u>Analyzed</u>	Method	Limit	<u>Matrix</u>
VOLATILES - BTEX (WATER)								
Benzene	<2.0	ug/L		mmk	06/03/2004	IA-OA1	2.0	WATER
malana		/ 7		mmk	06/03/2004	IA-OA1	2.0	WATER
Toluene	<2.0	ug/L		шиж	06/03/2004	IA-OAI	2.0	WAILK
Ethylbenzene	<2.0	uq/L		mmk	06/03/2004	IA-OA1	2.0	WATER
		3,						
Xylenes, Total	<3.0	ug/L		mmk	06/03/2004	IA-OA1	3.0	WATER
VOA Preservation pH	<2	units		dmd	06/04/2004	SW 9041A		WATER

All results are calculated on a wet weight basis.



QUALITY CONTROL REPORT

SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 Beth Curnes 06/04/2004

Job Number: 04.06925

Enclosed is the Quality Control data for the following samples submitted to TestAmerica, Inc. - Cedar Falls for analysis:

Sample Number	-	Sample Description	Date Taken	Date Received
802356	A		05/27/2004	05/28/2004
802357	B		05/27/2004	05/28/2004
802358	C		05/27/2004	05/28/2004

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Iowa Laboratory Certification number - 7

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QUALITY CONTROL REPORT

SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 Beth Curnes

Job Number: 04.06925

06/04/2004

	Result	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Analysis Method	Quantitation Limit
802356 A							
VOLATILES - BTEX (WATER)	,						,
Benzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Toluene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Ethylbenzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Xylenes, Total	<3.0	ug/L	06/03/2004		10526	IA-OA1	3.0
4-Bromofluorobenzene (surr.)	89.2	4 *	06/03/2004		10526	IA-OA1	1
VOA Preservation pH	<2	units	06/04/2004		974	SW 9041A	
802357 B			05/27/2004				
VOLATILES - BTEX (WATER)							
Benzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Toluene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Ethylbenzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Xylenes, Total	<3.0	ug/L	06/03/2004		10526	IA-OA1	3.0
4-Bromofluorobenzene (surr.)	87.8	*	06/03/2004		10526	IA-OA1	1
VOA Preservation pH	<2	units	06/04/2004		974	SW 9041A	
802358 C		(05/27/2004			·	
VOLATILES - BTEX (WATER)							
Benzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Toluene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Ethylbenzene	<2.0	ug/L	06/03/2004		10526	IA-OA1	2.0
Xylenes, Total	<3.0	ug/L	06/03/2004		10526	IA-OA1	3.0
4-Bromofluorobenzene (surr.)	89.4	* .	06/03/2004		10526	IA-OA1	1
VOA Preservation pH	<2	units	06/04/2004		974	SW 9041A	

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION

SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 Beth Curnes

Job Number: 04.06925

06/04/2004

Analyte	Prep Batch Number	Run Batch Number	CCV True Concentration	Concentration Found	Percent Recovery
VOLATILES - BTEX (WATER)					
Benzene .		10526	100.	84.0	84.0
Toluene		10526	100.	95.1	95.1
Ethylbenzene		10526	100.	95.8	95.8
Xylenes, Total		10526	300	285	95.0
4-Bromofluorobenzene (surr.)		10526	100.0	93.2	93.2

CCV - Continuing Calibration Verification

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QUALITY CONTROL REPORT BLANKS

SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313 Beth Curnes 06/04/2004

Job Number: 04.06925

	Prep	Run		
	Batch	Batch	Blank	
Analyte	Number	Number	Analysis	Units
101 1011				
VOLATILES - BTEX (WATER)				
Benzene		10526	<2.0	ug/L
Toluene		10526	<2.0	ug/L
Ethylbenzene .		10526	<2.0	ug/L
Xylenes, Total		10526	<3.0	ug/L



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QUALITY CONTROL REPORT LABORATORY CONTROL STANDARD

06/04/2004

Beth Curnes SENECA ENVIRONMENTAL SERVICES, INC. 4140 N.E. 14th St. Des Moines, IA 50313

Job No: 04.06925

	Prep	Run .									
	Batch	Batch	LCS		LCS	LCSD	LCS	LCSD	Control		RPD Max.
Analyte	Number	Number	Amount	Units	Result	Result	% Rec	% Rec	Limits	RPD	Limit
VOLATILES - BTEX (WATER)											
Benzene		10526	20.0	ug/L	17.4		87.0		47 - 114		20
Toluene	- `	10526	20.0	ug/L	19.5		97.5		69 - 113		20
Ethylbenzene		10526	20.0	ug/L	19.9		99.5		74 - 121		20
Xylenes, Total		10526	60.0	ug/L	59.9	•	99.8		72 - 114		20
4-Bromofluorobenzene (sur	r	10526	100.0	*	93.5		93.5		78 - 124		20

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TestAmerica Job Number: 04.06925

ATTACHMENTS

Following are the sample receipt log and the chain of custody applicable to this analytical report.

Any abnormalities or departures from sample acceptance policy shall be documented on the "Sample Receipt and Temperature Log Form" and Sample Non-Conformance Form" (if applicable) included with this report.

For information concerning certifications of this facility or another TestAmerica facility please visit our website at www.TestAmericaInc.com.

This data has been produced in compliance with 2001 NELAC Standards (July 2003), except where noted.

Samples collected by TestAmerica Field Services personnel are noted on the Chain of Custody (COC) and are sampled in accordance with TA-CF SOP CF09-01.

This report shall not be reproduced, except in full, without written approval of the laboratory.

For questions regarding this report, please contact the individual who signed the analytical report.

Testamerica Cedar Falls Division 704 Enterprise Drive Cedar Falls, IA 50613

Phone 319-277-2401 or 800-750-2401 Fax 319-277-2425

To assist us in using the proper analytical methods, is this work being conducted for regulatory purposes?

Compliance Monitoring

Citient Names Seneca Environmental Citent #: 4020 Address: 4140 NE 14th Street Project Names: Monines, IA 50315-0360 Project Names: Project Names: Project Names: Monines, IA 50315-0360 Project Names: Project Names: Project Names: Monines, IA 50315-0360 Project Names: Project Names: Name Names: Names: Name Names: Nam	ANALYTICAL TESTIN																7				0		
City/State/Dip Code: Des Moines IA 50316-0360 Project Manager: Beth Curl 5 Talephone Number: 515-262-3500 Sampler Manager: Peta Nama) Jurna 5 Carol C S Sampler Manager: Peta Nama) Jurna 5 Carol C S Sampler Signature: S Emell Address: Matrix Preservation 8 of Containant Outle 8: Post Invoice To: Seneca Environmental	Client Name Se	eneca En	<u>zironm</u>	ent	al				_ C	ilent	#:_	4	0200						•	٠.,		,	
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