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September 11, 2008

Mr. Glenn May, C.P.G. New York State Department of Environmental Conservation 270 Michigan Avenue Buffalo, NY 14203 SEP 15 2008

NYSDEC REG 9

FOIL

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Subject:

Semiannual Monitoring Report, May 2008 Scajaquada Creek Site (#915141B), Buffalo, NY

Dear Mr. May;

As required by the Operation and Maintenance (O&M) Plan, dated February 8, 2005, this report provides a semiannual summary of operations, maintenance, and field observations made by ENSR Corporation (ENSR) and National Fuel Gas (NFG) at the Scajaquada Creek site. The period discussed herein is from October 2007 through May 2008.

Constructed Sediment Cap Observations

During the field observations, the creek water was typically of low clarity, though no erosion of the sediment cap was evident. The armored expressway runoff channels were also all intact.

Previous Period's DNAPL Systems Operations

The Southern DNAPL Collection System was observed to function properly between the dates of October 29, 2007 and May 13, 2008. The system was checked by National Fuel Gas staff on January 8th, March 20th and May 8th. During these visits the automatic timer was adjusted to maximize the flow of DNAPL while minimizing the flow of groundwater, and tubing was advanced as needed to optimize the performance of the System's peristaltic pump.

The Northern DNAPL Collection System was observed to function properly between October 29, 2007 and May 8, 2008. The system was checked by National Fuel Gas staff on January 8th, March 20th and May 8th. During these visits the automatic timer was adjusted to optimize the flow of DNAPL and tubing was advanced as needed to optimize the performance of the System's peristaltic pump. During the May system check, NAPL was observed to be pumped for a continuous 15 minutes. The System was then switched to manual operations for 11.75 hours to maximize NAPL production. The Northern DNAPL Collection system was shut down from May 9th until May 13th, to allow DNAPL recharge to occur.

The volumes of DNAPL recovered this period (68 gallons in the Southern System and 15 gallons in the Northern System) are visual estimates only because the oil/water interface probe readings taken during the site visit were inconclusive. The volumes of DNAPL recovered to date appear to be approximately 1337 gallons by the Southern System and 386 gallons by the Northern System. System monitoring logs are attached.

Site #915141B Page 2

Conclusions

The constructed sediment cap appears intact. The DNAPL recovery program continues and both systems appear to be functioning properly.

Please call me at (518) 951-2288 if you have any questions or comments.

Daniel Shearer, P.E.

Project Engineer

Attachments: South DNAPL System Monitoring Log

North DNAPL System Monitoring Log

CC: B. Sadowski – NYSDEC, Buffalo

J. Clark, T. Alexander – NFG

K. Hogan – PLHB&B J. Finn – ENSR File: 04870-024-750 **South DNAPL System Monitoring Log**

Project Number 04870-024 September 2008

SOUTHERN SYSTEM

		Field Mea	asurements	(by OW	probe)	Calculati	ons (total ta	ank conten	its) *	Calculation	ons (this p	eriodrecov	ery)				
Date	Initials	Manhole rim to top of LNAPL (ft)	Manhole rim to top of Water (ft) (estimated)	Manhole rim to top of DNAPL (ft)	Manhole rim to bottom of Tank (ft)	LNAPL (gal)	Water (gal)	DNAPL (gal)	Total (gal)	Water Increase (gal)	NAPL Increase (gal)	% NAPL	NAPL (gpd)	Total Flow (gpd)	Operator's Notes	Transporter	Disposal Facilly
24-Jun-99	mrh	9.05	9.05	9.05	9.05	0	0	0	0	0	0	0%		0	90% construction complete, begin initial testing		
29-Jun-99	mrh/day	6.80	6.80	9.05	9.05	0	695	0	695	695	0	0%		139	Complete initial system test, PW2003 has silt damage		
23-Jul-99	mrh/day	6.80	6.80	9.05	9.05	0	695	0	695	0	0	0%		0	Recommence shakedown with peristaltic pump		
30-Jul-99	day	6.34	6.34	8.95	9.05	0	806	31	837	111	31	22%	4.41	20	Shakedown, flow adjustment	-	
26-Aug-99	jhe	5.90	5.90	8.73	9.05	0	874	99	973	68	68	50%	2.52	5	Routine system check, slow drip from tank bung noted (0.5 gpd?)		
16-Sep-99	mrh/bdc	5.79	5.80	8.75	9.05	3	911	93	1007	37	-3			2	Significant (2 gpd?) DNAPLloss through bung drip, PW2003 reinstalled	-	
28-Sep-99	mrh/cc	3.30	3.32	8.61	9.05	6	1633	136	1775	723	46	6%	3.86	64	Tank emptied (was full, pump off), bung replaced,	IWR / BFC	Research Oil
28-Sep-99	mrh/cc	9.05 8.75	9.05 8.75	9.05	9.05 9.05	0	86	6	93	0 86	6	7%	1.24	19	vault cleaned, flow setting reduced to 4.5		
3-Oct-99 11-Oct-99	mrh cc	8.75	8.75	9.03	9.05	0	86	6	93	0	0	0%	1.24	0	Measurements are visual estimates only, flow setting reduced to 3.5 No flow observed, flow setting increased to 5.0		
29-Oct-99	œ	6.81	6.81	8.98	9.05	0	670	22	692	584	15	3%	0.86	33	Flow setting decreased to 4.0		
2-Dec-99	mrh/day	6.09	6.10	8.77	9.05	3	824	86	914	154	68	31%	2.00	7	Flow setting increased to 4.7 (24 gpd), timer installed/set for 1pm to 2pm operation	·	
16-Dec-99	œ														Pump running but no flow, Timer reset for 3 hr per day operation	_	
9-Mar-00		6.09	6.10	8.89	9.05	3	861	49	914	37	-37	_		0	PW2000 running but no flow, Peristaltic installed (2 hr/day), DNAPL thickened over time	_	_
11-Apr-00		4.71	4.73	8.82	9.05	6	1263	71	1340	401	25	6%	0.75	13	New peristaltic purchased/installed. Flow setting #7 (for 2 hr/day).		
1-May-00		4.62	4.64	8.80	9.05	6	1284	77	1368	22	6	22%	0.31	1	No flow (tubing collapsed). Repaired.		
4-May-00	day/jc	4.62	4.64	8.80	9.05	6	1284	77	1368	0	0	0%		0	No flow (tubing leak). Tank emptied. System turned off.	IWR / BFC	Puretech System
8-May-00	mrh/jtf	9.05	9.05	9.05	9.05	0	0	0	0	0	0	0%		0	Original tubing replaced with silicon. System restarted at flow setting #3 (for 2 hr/day).		
8-Jun-00	mrh/day	8.55	8.56	8.98	9.05	3	130	22	154	130	25	16%	0.80	5	Backfill settled around vault. Total depth shallow, measurements estimated. Tubing adjusted.		
10-Jul-00	mrh/dms	8.10	8.11	8.90	9.05	3	244	46	293	114	25	18%	0.77	4	Tubing was worn; adjusted.		
5-Aug-00	day	7.30	7.31	8.80	9.05	3	460	77	540	216	31	12%	0.67	5	Tubing adjusted.		
20-Oct-00	mrh	6.25	6.26	8.64	9.05	3	735	127	865	275	49	15%	0.88	6	Tubing wom; adjusted.		
0-Nov-00	mrh	5.75	5.77	8.55	9.05	6	858	154	1019	124	31	20%	0.75	4	Tubing wom; adjusted. Flow rate setting reduced from 3.0 to 1.5; timer not changed		
18-Jan-01	mrh	5.75	5.77	8.55	9.05	6	858	154	1019	0	0			0	Pump starts rough and sounds bad. Pump removed and sent in for repairs.		
7-Feb-01	mrh/hs	5.75	5.77	8.55	9.05	6	858	154	1019	0	0	0%		0	Temporary FloJet pump installed but insufficient NPSH due to low creek elevation.		
30-Mar-01	mrh	5.75	5.77	8.55	9.05	6	858	154	1019	3	- 12	0%	1 12	0	Peristaltic (geopump) installed, full speed, 600 rpm, system OK. NAPL is hi viscocity/settled.		
10-Apr-01	mrh dme/ic	5.70 5.65	5.72 5.68	8.51 8.52	9.05 9.05	6 9	861 877	167 164	1034 1050	15	12 0	80%	1.12 0.00	0.4	3/16" id tubing replaced with 3/8" id tubing. Float switch replaced (plus relay). Tubing worn and soft; adjusted.		
18-May-01 30-Aug-01	dms/jc mrh/hs	5.53	5.55	8.39	9.05	6	877	204	1087	0	37	100%	0.36	0.4	NAPL appears to be accumulated in well. Timer set to 3 hrs/day. Original peristaltic re-installed.		
3-Oct-01	hs/jc	5.46	5.48	8.35	9.05	6	886	216	1108	9	12	57%	0.36	0.6	NAPL may still be accumulated in well. Timer increased to 4 hrs/day.		
6-Nov-01	hs/jc	5.30	5.32	8.27	9.05	6	911	241	1158	25	25	50%	0.73	1.5	Additional NAPL purged from well after readings taken. Timer decreased to 3 hrs/day.	_	
7-Feb-02	hs/jc	3.89	3.91	8.22	9.05	6	1331	256	1593	420	15	4%	0.17	4.7	Adjusted peristaltic tubing.	_	
8-Mar-02	hs/jc	3.81	3.83	8.17	9.05	6	1340	272	1618	9	15	62%	0.53	0.9	Adjusted peristaltic tubing.		
10-Apr-02	mrh	3.43	3.45	7.88	9.05	6	1368	361	1735	28	90	76%	2.71	3.6	Adjusted tubing. Installed piston pump for one day test (then removed). Timer increased to 4 hrs.		•
7-May-02	hs/jc	3.15	3.17	7.82	9.05	6	1436	380	1822	68	19	21%	0.69	3.2	Tank full.	Frank's Vacuum	Chemtron
7-May-02		9.05	9.05	9.05	9.05	0	0	0	0						Tank pumped out.		
25-Jun-02	cd	6.00	6.02	9.02	9.05	6	926	9	942	926	15	2%	0.32	19.2	Depth's estimated. Pump set at #4, 3 hrs/day	· -	
2-Aug-02	mrh/jc	3.15	3.17	9.00	9.05	6	1800	15	1822	874	6	1%	0.16	23.2	Tank full, mostly water.		
6-Sep-02	jc	3.15	3.17	9.00	9.05	6	1800	15	1822	0	0	0%		0.0	Tank Emptied.	Frank's Vacuum	Clean Harbors, M
6-Sep-02	mrh.fi-	9.05	9.05	9.05	9.05	0	0	22	22	_	22	100%	0.68	0.7	Dumn removed for reneir		
8-Oct-02 18-Nov-02	mrh/jc cd	8.98 8.98	8.98 8.98	8.98 8.98	9.05 9.05	0	0	22	22	0	22 0	0%	0.06	0.7	Pump removed for repair Pump reinstalled		
4-Feb-03	mrh/jc	4.32	4.32	8.95	9.05	0	1430	31	1460	1430	9	1%	0.12	18.4	Tank again full of mostly water (timer was left on manual?). Tank emptied.	Frank's Vacuum	Clean Harbors, M
4-Feb-03	,0	9.05	9.05	9.05	9.05	0	0	0	0				2				
2-Mar-03	jc	9.00	9.00	9.00	9.05	0	0	15	15	0	15	100%	0.43	0.4	Pump running fast, so removed for evaluation/repair.		
10-Apr-03	mrh/jc	9.00	9.00	9.00	9.05	0	0	15	15	0	0	0%		0.0	Pump reinstalled: runs fast/variable with no load, runs OK with flow load. Timer set to 30 min/day, speed 8.		
23-Jul-03	mrh/jc	8.78	8.78	8.78	9.05	0	0	83	83	0	68	100%	0.65	0.7	Additional system checks/adjustments made by J Clark on 5/5, 5/20, 6/12, and 6/24.		
23-Apr-04	mrh	8.05	8.06	8.55	9.05	3	151	154	309	151	74	33%	0.27	0.8	Additional system checks/adjustments made by NFG on 8/01, 8/06, 9/05, 9/08, 9/11, 9/17, 9/25, 10/30, 11/18.		
4-Nov-04	jl,jc	7.31	7.32	8.54	9.05	3	377	157	537	225	3	1%	0.01	1.1	O/W Interface probe notacting precisely, actual DNAPL volume probably greater.		
19-Apr-05 i	mh,jc,jl,sh	7.19	7.20	8.43	9.05	3	380	191	574	3	34	92%	0.23	0.3	Additional system checks/adjustments made by J Clark on 11/24, 1/20/2005, 3/7, 3/11, 4/12, 4/18.	-	
27-Oct-05	mrh, jc	6.96	6.97	8.20	9.05	3	380	262	645	0	71	100%	0.37	0.4	New OWI probe, but readings inconsistent with previous readings. System checks by NFG 5/11, 6/24, 7/28, 8/25, 10/06.		
2-Mar-06		6.78	6.79	8.02	9.05	3	380	318	701	0	56	100%	0.38	0.4	Additional system checks by NFG 10/26/05, 12/14/05, 1/6/06, 2/24/06.		
24-Oct-06		4.90	4.91	7.38	9.05	3	763	516	1281	383	198	34%	0.91	2.7	Depth to NAPL reading is approximate. Additional system checks by NFG 5/11, 6/29, 7/26, 9/07.	-	_
	jc, cb	3.36	3.37	7.15	9.05	3	1167	587	1757	404	71	15%	0.55	3.7	Pump turned off 3/02/07 because tanknear full. Readings taken 4/25/07. Depth to DNAPL reading is approximate.	-	
		9.05	9.05	9.05	9.05	0	0	0	0	-		400/	0.10		Tank pumped out.	-	
1-Jun-07	4				9.05	3	139	12	154	139	15	10%	0.10	1.0	Depth to DNAPL reading is approximate.		
	dms, jc	8.55	8.56	9.01								90/					
		8.55 5.79	8.56 5.81	8.80	9.05	6	923	77	1007	784	68	8%	0.35	4.3	Depth to DNAPL reading is approximate. System checks/timer adjustments by NFG on 01/08/08, 3/20/08, and 05/08/08.		

North DNAPL System Monitoring Log

Project Number 04870-024 September 2008

NORTHERN SYSTEM

		Field Measurements (by OWI probe) Calculations (total tank contents) * Calculations (this period recovery)											erv)			T	
Date	Initials	Manhole rim to top of LNAPL (ft)	Manhole rim to top of Water (ft) (estimated)	Manhole rim to top of DNAPL (ft)	Manhole rim to bottom of Tank (ft)	LNAPL (gal)	Water (gal)	DNAPL (gal)	Total (gal)	Water Increase (gal)	NAPL Increase (gal)	% NAPL	NAPL (gpd)	Total Flow (gpd)	Operator's Notes	Transporter	Disposal Facility
28-Nov-01	mrh/cd	8.89	8.89	8.89	8.89	0	0	0	0	0	0	0%	0.00	0.0	Develop well with hand operated diaphragm pump. Measurements are approximate.		
7-Feb-02	hs/jc	8.62	8.62	8.85	8.89	0	71	12	83	71	12	15%	0.17	1.2	Pump well by hand.		
8-Mar-02	hs/jc	8.61	8.61	8.85	8.89	0	74	12	86	3	0	0%	0.00	0.1	Pump well by hand.		
10-Apr-02	mrh	8.59	8.59	8.84	8.89	0	77	15	93	3	3	50%	0.09	0.2	Pump well by hand.		
7-May-02	hs/jc	8.51	8.51	8.83	8.89	0	99	19	117	22	3	12%	0.11	0.9	Hand pump not working well.		
25-Jun-02	cd	8.51	8.51	8.83	8.89	0	99	19	117	0	0	0%	0.00	0.0	Hand pump not working. Discarded.		
2-Aug-02	mrh/jc	8.51	8.51	8.83	8.89	0	99	19	117	0	0	0%	0.00	0.0	Begin peristaltic startup. Setting #6.5, 2hr 15 min per day		
8-Oct-02	mrh/jc	7.43	7.44	8.55	8.89	3	343	105	451	244	90	27%	1.34	5.0	Additional system checks/adjustments made by J Clark on 8/15, 8/21, 8/27, 9/09, and 9/12.		
4-Feb-03	mrh/jc	7.36	7.37	8.52	8.89	3	355	114	472	12	9	43%	0.08	0.2	Numbers approximate. Surface of contents frozen. Turn on heat.		
10-Apr-03	mrh/jc	7.28	7.29	8.50	8.89	3	374	120	497	19	6	25%	0.10	0.4	Pumping mostly water, changed timer to 30 min/week.		
23-Jul-03	mrh	7.05	7.06	8.49	8.89	3	442	124	568	68	3	4%	0.03	0.7	Additional system checks/adjustments made by J Clark on 5/5, 5/20, 6/12, and 6/24.		
23-Apr-04	mrh	6.90	6.91	8.42	8.89	3	466	145	614	25	22	47%	0.08	0.2	Additional system checks/adjustments made by NFG on 8/01, 8/06, 9/05, 9/08, 9/11, 9/17, 9/25, 10/30, 11/18.		
24-Nov-04	jl, jc	6.66	6.67	8.41	8.89	3	537	148	689	71	3	4%	0.01	0.3	O/W interface probe not working accurately, depth of DNAPL is estimated.		
19-Apr-05	mh,jc,jl,sh	6.45	6.46	8.39	8.89	3	596	154	753	59	6	10%	0.04	0.4	Additional system checks/adjustments made by J Clark on 11/24, 1/20/2005, 3/7, 3/11, 4/12, 4/18.		
26-Oct-05	mrh, jc	6.33	6.34	8.30	8.89	3	605	182	790	9	28	75%	0.15	0.2	New OWI probe, but readings inconsistent with previous readings. System checks by NFG 5/11, 6/24, 7/28, 8/25, 10/06.		
22-Mar-06	mrh, jc	6.20	6.21	8.23	8.89	3	624	204	831	19	22	54%	0.15	0.3	Additional system checks by NFG 10/26/05, 12/14/05, 1/6/06, 2/24/06.		
24-Oct-06	mrh, jc	5.20	5.21	7.89	8.89	3	828	309	1139	204	105	34%	0.49	1.4	Depth to NAPL reading is approximate. Additional system checks by NFG 5/11, 6/29, 7/26, 9/07.		
25-Apr-07	mrh, jc	4.90	4.91	7.80	8.89	3	892	337	1232	65	28	30%	0.15	0.5	Depth to NAPL reading is approximate. Additional system checks by NFG 10/31/2006, 11/16/2006, 3/02/2007.		
30-Oct-07	dms, jc	4.68	4.69	7.70	8.89	3	929	367	1300	37	31	45%	0.16	0.4	Depth to NAPL reading is approximate. Tubing changed out.		
13-May-08	dms, jc	3.46	3.47	7.65	8.89	3	1291	383	1677	361	15	4%	0.08	1.9	Depth of DNAPL is estimated. Additional system checks by NFG on 1/08/08, 3/20/08 and 5/08/08.		
									_	-		_					
														_			
Input values	 S							Cumulative	gallons :	1291	386				<u> </u>	* 309 gallo	ns per foot of tank heigh