



ENVIRONMENTAL ENGINEERING, INC.
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August 21, 2014

RECEIVED

By Alameda County Environmental Health at 9:58 am, Aug 22, 2014

Mr. Mark Detterman
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: MPE Progress Report at 15101 Freedom Avenue, San Leandro, California

Dear Mr. Detterman:

Based on Your approval dated July 17, 2014, SOMA Environmental Engineering, Inc. (SOMA) started multi-phase extraction (MPE) operation at 15101 Freedom Ave, San Leandro on July 24, 2014.

Approximately 313 pounds (lbs.) of contaminant (calculated as hexane) has been removed from the subsurface as of August 12, 2014 at the rate of 16 lbs. /day (Table attached) using a combination of MPE-1, MPE-2, MW-3, and MW-6. Approximately 75,756 gallons of groundwater has been extracted, treated, and discharged to the sanitary sewer system in this duration.

MPE operation is ongoing at the site. Currently, SOMA field crew is also using air sparging in order to enhance remediation. This has increased the PID readings significantly, demonstrating the effectiveness of air sparging along with MPE operation.

Based on the current mass removal rates and increased PID readings, SOMA proposes to extend the duration of MPE event to six weeks and keep the system running till September 8, 2014.

Please feel free to call me at (925) 734-6400 if you have any questions or comments.

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist



PERJURY STATEMENT

Site Location: 15101 Freedom Avenue, San Leandro, California

"I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge".

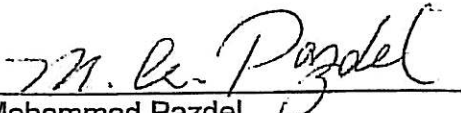

Mohammad Pazdel
1770 Pistacia Court
Fairfield, California 94533
Responsible Party

Table
MPE Event
Extraction Data and VOC Mass Removal Rate
July-August 2014
15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL			
						minutes	minutes	SCFM	ft ³ of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min
MPE-1	START	7/24/2014	1000	0	0									
			1100	60	60	98	5,884	15.5244	550	0.0006	0.7360	0.0123	18	
			1200	60	120	96	5,789	15.2732	575	0.0006	0.7570	0.0126	18	
			1300	60	180	98	5,884	15.5244	566	0.0006	0.7574	0.0126	18	
			1400	60	240	98	5,884	15.5244	553	0.0006	0.7400	0.0123	18	
			1500	60	300	96	5,789	15.2732	540	0.0005	0.7109	0.0118	17	
			1600	60	360	98	5,884	15.5244	523	0.0005	0.6999	0.0117	17	
MPE-1,MPE-2,MW-3		7/25/2014	1700	60	420	96	5,789	15.2732	525	0.0005	0.6912	0.0115	17	
			800	900	1,320	109	98,253	259.2427	498	0.0005	11.1287	0.0124	18	
			900	60	1,380	109	6,550	17.2828	474	0.0005	0.7062	0.0118	17	
			1000	60	1,440	109	6,550	17.2828	456	0.0005	0.6793	0.0113	16	
			1100	60	1,500	103	6,169	16.2780	447	0.0004	0.6272	0.0105	15	
			1200	60	1,560	133	7,978	21.0510	1,076	0.0011	1.9525	0.0325	47	
			1300	60	1,620	133	7,978	21.0510	890	0.0009	1.6150	0.0269	39	
		1400	60	1,680	133	7,978	21.0510	743	0.0007	1.3482	0.0225	32		
		1500	60	1,740	133	7,978	21.0510	626	0.0006	1.1359	0.0189	27		
		1600	60	1,800	117	7,026	18.5389	678	0.0007	1.0835	0.0181	26		
		1700	60	1,860	104	6,265	16.5292	827	0.0008	1.1783	0.0196	28		
		1800	60	1,920	109	6,550	17.2828	841	0.0008	1.2529	0.0209	30		
		2150	1670	3,590	162	269,762	711.7743	552	0.0006	33.8679	0.0203	29		
		7/26/2014	1730	1180	4,770	147	173,759	458.4664	549	0.0005	21.6964	0.0184	26	
		7/27/2014	830	900	5,670	149	133,956	353.4459	481	0.0005	14.6546	0.0163	23	
		7/28/2014	930	60	5,730	149	8,930	23.5631	518	0.0005	1.0521	0.0175	25	
			1030	60	5,790	149	8,930	23.5631	624	0.0006	1.2674	0.0211	30	
			1130	60	5,850	149	8,930	23.5631	785	0.0008	1.5944	0.0266	38	
			1230	60	5,910	112	6,741	17.7853	811	0.0008	1.2433	0.0207	30	
			1330	60	5,970	109	6,550	17.2828	773	0.0008	1.1516	0.0192	28	
			1430	60	6,030	109	6,550	17.2828	767	0.0008	1.1427	0.0190	27	
	1530	60	6,090	109	6,550	17.2828	754	0.0008	1.1233	0.0187	27			
	1630	60	6,150	108	6,455	17.0316	712	0.0007	1.0453	0.0174	25			
	1730	60	6,210	106	6,360	16.7804	687	0.0007	0.9937	0.0166	24			
7/29/2014	800	870	7,080	109	94,978	250.6013	659	0.0007	14.2356	0.0164	24			
	900	60	7,140	109	6,550	17.2828	698	0.0007	1.0399	0.0173	25			
	1000	60	7,200	109	6,550	17.2828	709	0.0007	1.0563	0.0176	25			
	1100	60	7,260	61	3,678	9.7039	701	0.0007	0.5864	0.0098	14			
	1200	60	7,320	87	5,192	13.7002	695	0.0007	0.8208	0.0137	20			
	1300	60	7,380	87	5,192	13.7002	693	0.0007	0.8184	0.0136	20			

Table

**MPE Event
Extraction Data and VOC Mass Removal Rate
July-August 2014
15101 Freedom Avenue
San Leandro, California**

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL			
						minutes	minutes	SCFM	ft ³ of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min
		7/30/2014	1400	60	7,440	119	7,145	18.8527	684	0.0007	1.1116	0.0185	27	
			1500	60	7,500	105	6,327	16.6949	673	0.0007	0.9685	0.0161	23	
			1600	60	7,560	112	6,747	17.8029	659	0.0007	1.0113	0.0169	24	
			1700	60	7,620	61	3,653	9.6388	538	0.0005	0.4470	0.0075	11	
			1800	60	7,680	136	8,189	21.6073	622	0.0006	1.1585	0.0193	28	
			800	840	8,520	89	74,742	197.2073	587	0.0006	9.9786	0.0119	17	
			900	60	8,580	94	5,650	14.9075	608	0.0006	0.7813	0.0130	19	
			1000	60	8,640	125	7,484	19.7454	631	0.0006	1.0740	0.0179	26	
			1100	60	8,700	124	7,451	19.6594	636	0.0006	1.0778	0.0180	26	
			1200	60	8,760	123	7,406	19.5408	628	0.0006	1.0578	0.0176	25	
			1300	60	8,820	138	8,280	21.8473	618	0.0006	1.1638	0.0194	28	
			1400	60	8,880	123	7,406	19.5408	598	0.0006	1.0073	0.0168	24	
			1500	60	8,940	137	8,238	21.7355	610	0.0006	1.1429	0.0190	27	
			1600	60	9,000	137	8,210	21.6620	604	0.0006	1.1278	0.0188	27	
		7/31/2014	1700	60	9,060	122	7,331	19.3424	610	0.0006	1.0171	0.0170	24	
			800	900	9,960	87	78,552	207.2615	589	0.0006	10.5230	0.0117	17	
			900	60	10,020	87	5,237	13.8174	575	0.0006	0.6849	0.0114	16	
			1000	60	10,080	123	7,406	19.5408	495	0.0005	0.8338	0.0139	20	
			1100	60	10,140	123	7,406	19.5408	495	0.0005	0.8338	0.0139	20	
			1200	60	10,200	123	7,356	19.4079	481	0.0005	0.8047	0.0134	19	
			1300	60	10,260	122	7,349	19.3914	465	0.0005	0.7773	0.0130	19	
			1400	60	10,320	122	7,349	19.3914	489	0.0005	0.8174	0.0136	20	
			1500	60	10,380	133	7,990	21.0823	449	0.0004	0.8160	0.0136	20	
			1600	60	10,440	127	7,602	20.0579	423	0.0004	0.7314	0.0122	18	
			1700	60	10,500	125	7,505	19.8034	457	0.0005	0.7801	0.0130	19	
			1800	60	10,560	128	7,695	20.3036	457	0.0005	0.7998	0.0133	19	
			8/1/2014	1000	960	11,520	128	123,225	325.1317	440	0.0004	12.3316	0.0128	18
				1130	90	11,610	128	11,562	30.5069	433	0.0004	1.1387	0.0127	18
		1230		60	11,670	125	7,524	19.8535	489	0.0005	0.8369	0.0139	20	
		1330		60	11,730	136	8,169	21.5530	496	0.0005	0.9215	0.0154	22	
		1430		60	11,790	122	7,306	19.2776	495	0.0005	0.8226	0.0137	20	
		1530		60	11,850	112	6,725	17.7434	494	0.0005	0.7556	0.0126	18	
		1630		60	11,910	162	9,731	25.6742	482	0.0005	1.0667	0.0178	26	
		1730		60	11,970	106	6,343	16.7369	491	0.0005	0.7084	0.0118	17	
		8/2/2014		1400	1230	13,200	114	139,733	368.6895	421	0.0004	13.3798	0.0109	16
				1500	60	13,260	114	6,810	17.9695	428	0.0004	0.6630	0.0110	16
				1600	60	13,320	116	6,990	18.4432	451	0.0005	0.7170	0.0120	17

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San Leandro, California**

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL			
						minutes	minutes	SCFM	ft ³ of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane	lbs/min
		8/4/2014	1700	60	13,380	123	7,356	19.4079	448	0.0004	0.7495	0.0125	18	
			1800	60	13,440	106	6,370	16.8077	432	0.0004	0.6259	0.0104	15	
			1900	60	13,500	106	6,381	16.8363	445	0.0004	0.6458	0.0108	15	
			730	2190	15,690	62	135,159	356.6196	389	0.0004	11.9581	0.0055	8	
			800	30	15,720	62	1,848	4.8768	376	0.0004	0.1581	0.0053	8	
			900	60	15,780	73	4,370	11.5308	372	0.0004	0.3698	0.0062	9	
			1000	60	15,840	95	5,707	15.0588	384	0.0004	0.4985	0.0083	12	
			1100	60	15,900	113	6,793	17.9236	388	0.0004	0.5995	0.0100	14	
			1200	60	15,960	116	6,972	18.3963	393	0.0004	0.6232	0.0104	15	
			1300	60	16,020	122	7,349	19.3914	409	0.0004	0.6837	0.0114	16	
			1400	60	16,080	122	7,325	19.3262	399	0.0004	0.6647	0.0111	16	
			1500	60	16,140	122	7,325	19.3262	382	0.0004	0.6364	0.0106	15	
			1600	60	16,200	125	7,505	19.8034	389	0.0004	0.6640	0.0111	16	
			1700	60	16,260	106	6,365	16.7935	420	0.0004	0.6080	0.0101	15	
		8/5/2014	1730	30	16,290	106	3,185	8.4039	418	0.0004	0.3028	0.0101	15	
			730	840	17,130	55	46,449	122.5555	385	0.0004	4.0673	0.0048	7	
			800	30	17,160	55	1,656	4.3695	393	0.0004	0.1480	0.0049	7	
			900	60	17,220	62	3,703	9.7704	414	0.0004	0.3487	0.0058	8	
			1000	60	17,280	62	3,690	9.7370	411	0.0004	0.3450	0.0057	8	
			1100	60	17,340	87	5,210	13.7468	392	0.0004	0.4645	0.0077	11	
			1200	60	17,400	106	6,370	16.8077	415	0.0004	0.6013	0.0100	14	
			1300	60	17,460	126	7,537	19.8871	385	0.0004	0.6600	0.0110	16	
			1400	60	17,520	119	7,169	18.9165	409	0.0004	0.6669	0.0111	16	
			1500	60	17,580	120	7,218	19.0460	403	0.0004	0.6616	0.0110	16	
			1600	60	17,640	113	6,759	17.8328	404	0.0004	0.6210	0.0104	15	
			1700	60	17,700	128	7,689	20.2865	409	0.0004	0.7152	0.0119	17	
			8/6/2014	730	870	18,570	99	86,135	227.2688	397	0.0004	7.7775	0.0089	13
				800	30	18,600	99	2,970	7.8369	394	0.0004	0.2662	0.0089	13
		900		60	18,660	103	6,154	16.2378	395	0.0004	0.5529	0.0092	13	
		1000		60	18,720	122	7,343	19.3751	399	0.0004	0.6664	0.0111	16	
		1100		60	18,780	122	7,343	19.3751	388	0.0004	0.6480	0.0108	16	
		1200		60	18,840	122	7,343	19.3751	392	0.0004	0.6547	0.0109	16	
		1300		60	18,900	116	6,966	18.3808	395	0.0004	0.6258	0.0104	15	
		1400		60	18,960	105	6,317	16.6671	392	0.0004	0.5632	0.0094	14	
		1500		60	19,020	112	6,725	17.7434	390	0.0004	0.5965	0.0099	14	
		1600		60	19,080	122	7,325	19.3262	386	0.0004	0.6430	0.0107	15	
		1700		60	19,140	122	7,343	19.3751	406	0.0004	0.6781	0.0113	16	

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Extraction Data and VOC Mass Removal Rate
July-August 2014
15101 Freedom Avenue
San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
						minutes	minutes	SCFM	ft ³ of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane
		8/7/2014	730	870	20,010	87	75,417	198.9898	407	0.0004	6.9812	0.0080	12
			800	30	20,040	62	1,847	4.8727	415	0.0004	0.1743	0.0058	8
			900	60	20,100	87	5,210	13.7468	402	0.0004	0.4764	0.0079	11
			1000	60	20,160	132	7,901	20.8480	407	0.0004	0.7314	0.0122	18
			1100	60	20,220	107	6,397	16.8794	409	0.0004	0.5951	0.0099	14
			1200	60	20,280	107	6,403	16.8938	405	0.0004	0.5898	0.0098	14
			1300	60	20,340	114	6,816	17.9849	414	0.0004	0.6418	0.0107	15
			1400	60	20,400	163	9,780	25.8057	408	0.0004	0.9076	0.0151	22
			1500	60	20,460	107	6,397	16.8794	400	0.0004	0.5820	0.0097	14
			1600	60	20,520	123	7,393	19.5073	398	0.0004	0.6692	0.0112	16
			1700	60	20,580	137	8,224	21.6987	365	0.0004	0.6827	0.0114	16
		8/8/2014	1000	1020	21,600	73	74,613	196.8670	225	0.0002	3.8182	0.0037	5
			1100	60	21,660	78	4,708	12.4229	260	0.0003	0.2784	0.0046	7
			1200	60	21,720	73	4,397	11.6004	265	0.0003	0.2650	0.0044	6
			1300	60	21,780	92	5,502	14.5168	278	0.0003	0.3479	0.0058	8
			1400	60	21,840	107	6,425	16.9520	274	0.0003	0.4004	0.0067	10
			1500	60	21,900	117	7,037	18.5668	270	0.0003	0.4321	0.0072	10
			1600	60	21,960	124	7,417	19.5711	274	0.0003	0.4622	0.0077	11
			1700	60	22,020	124	7,416	19.5677	279	0.0003	0.4706	0.0078	11
			2200	300	22,320	73	21,907	57.8025	378	0.0004	1.8834	0.0063	9
		8/9/2014	1400	960	23,280	119	114,226	301.3889	372	0.0004	9.6645	0.0101	14
			1500	60	23,340	119	7,133	18.8210	365	0.0004	0.5922	0.0099	14
			1600	60	23,400	116	6,966	18.3808	359	0.0004	0.5688	0.0095	14
			1700	60	23,460	106	6,370	16.8077	361	0.0004	0.5230	0.0087	13
			1800	60	23,520	95	5,707	15.0588	365	0.0004	0.4738	0.0079	11
		8/10/2014	1400	1200	24,720	128	153,513	405.0486	362	0.0004	12.6393	0.0105	15
			1500	60	24,780	122	7,331	19.3424	358	0.0004	0.5969	0.0099	14
			1600	60	24,840	122	7,343	19.3751	351	0.0004	0.5862	0.0098	14
		8/11/2014	730	930	25,770	61	57,151	150.7949	362	0.0004	4.7055	0.0051	7
			800	30	25,800	61	1,842	4.8602	374	0.0004	0.1567	0.0052	8
			900	60	25,860	92	5,502	14.5168	384	0.0004	0.4805	0.0080	12
			1000	60	25,920	124	7,419	19.5745	400	0.0004	0.6749	0.0112	16
			1100	60	25,980	55	3,318	8.7540	303	0.0003	0.2286	0.0038	5
			1200	60	26,040	87	5,219	13.7702	415	0.0004	0.4926	0.0082	12
			1300	60	26,100	100	5,980	15.7787	403	0.0004	0.5481	0.0091	13
			1400	60	26,160	100	5,980	15.7787	416	0.0004	0.5658	0.0094	14

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MPE Event
Extraction Data and VOC Mass Removal Rate
July-August 2014
 15101 Freedom Avenue
 San Leandro, California

MPE WELL	COMMENT	DATE	CLOCK TIME	INCREMENTAL TIME	ELAPSED TIME	Q			PID		MASS REMOVAL		
						minutes	minutes	SCFM	ft ³ of extracted air	Moles of extracted air	ppmv as hexane	VOC mole %	lb VOC mass removal as hexane
MPE-1,2; MW-3,6		8/12/2014	1500	60	26,220	107	6,424	16.9491	408	0.0004	0.5961	0.0099	14
			1600	60	26,280	111	6,634	17.5049	416	0.0004	0.6277	0.0105	15
			1700	60	26,340	138	8,293	21.8811	410	0.0004	0.7733	0.0129	19
			800	900	27,240	87	78,687	207.6185	391	0.0004	6.9976	0.0078	11
			900	60	27,300	87	5,246	13.8412	398	0.0004	0.4749	0.0079	11
			1000	60	27,360	124	7,419	19.5745	405	0.0004	0.6834	0.0114	16
			1100	60	27,420	87	5,246	13.8412	819	0.0008	0.9772	0.0163	23
			1200	60	27,480	92	5,501	14.5143	784	0.0008	0.9809	0.0163	24
	TOTAL				27,480		2,916,702	7,696			313	0.0114	16
	MEDIAN					112			422	0.0004			

Notes

Q volumetric flow rate
 SCFM standard cubic feet per minute
 ft³ cubic feet per minute
 VOC volatile organic compounds
 PID photo-ionization detector
 ppmv parts per million vapor

DERIVATION OF MASS REMOVAL RATE

ppmv as hexane/1,000,000 = VOC mole %
 ft³ of extracted air/(379 ft³ air/lb-mole air) = moles of extracted air
 (moles of extracted air)(VOC mole %)(86.2 lb/lb-mole hexane) = lbs of VOC removed as hexane
 (lbs of VOC mass removed as hexane)(elapsed time) = lbs/min of VOC removed as hexane
 (lbs/min of VOC removed as hexane)(60 min/1 hour)(24 hours/1 day) = lbs/day of VOC removed as hexane