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March 6, 2007

Project No.: 013-6054

Chief, New Jersey Superfund Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

Attn: Ms. Renée Gelblat, Remedial Project Manager

RE: ATTACHMENT TO REVISED ADDENDUM TO REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
LIGHTMAN DRUM SITE, WINSLOW TOWNSHIP, NEW JERSEY

Dear Ms. Gelblat:

This attachment to the Revised Addendum to the Remedial Investigation/Feasibility Study Work Plan (May 2006) for the Lightman Drum Superfund Site, in Winslow Township, New Jersey has been prepared by Golder Associates Inc. (Golder) in response to comments received from USEPA on July 3, 2006. As agreed to with USEPA, the work included as part of the Revised Addendum was carried out in April and May 2006 and the results have been included in the Remedial Investigation Report (August 2006).

Each of USEPA's comments is reiterated below, followed by a response that provides the requested information.

1. ***Comment 5 of EPA's March 1, 2006 was not addressed: Please explain the rationale for collection of the Target Analyte List (TAL) metals samples that are most impacted by VOCs.***

   The previous revision addressed this comment by noting: Samples for TAL metals analysis were collected from the interval that indicated the most impacts from VOCs in order to provide the most comprehensive analytical data within the potential source areas.

   In this context it should also be noted that the Remedial Investigation and Risk Assessment results do not identify metals as significant constituents of concern at the Site. Analysis of metals was included in the scope of the addendum as a precautionary step and was applied to the samples that were most impacted by Site-related constituents of concern.

2. ***Section 2.3, third sentence – Provide a figure indicating where the additional samples will be (were) collected for iron analysis around well MW-2A.***

   Figure 1, attached, indicates where additional borings were taken around well MW-2A for iron analyses. These borings were identified as PTB1, PTB2, and PTB4; boring PTB3 does not exist.

3. ***Section 3.0, second paragraph – Golder refers the reader to Table 1 in the first and second sentence. Although the methods are listed in a foot note at the bottom of Table 1, a better reference would be to Table A-3 of the Sampling and Analysis Plan (SAP), provided in Attachment B which also provides the PARCC data for the aqueous samples.***

   Section 3.0, second paragraph is revised to read:

   Groundwater samples will be analyzed for TCL/TAL analytes, Natural Attenuation Parameters[1] and 1,4-dioxane, using the methods described in Table A-3 of the revised Sampling and Analysis Plan (Appendix B). In addition, tentatively identified compound (TIC) data will be reviewed for the possible presence of 1,2-diphenylhydrazine and benzidine during the SVOC analysis. Sample collection requirements, holding times, quality assurance/quality control samples, sample shipping, and other analysis requirements will be as specified in the SAP (section 2.6.1.1 and tables A-2, A-3, and A-8). Revised Tables A-1 through A-9 of the SAP are provided in Appendix B.

4. ***Table 1 – Replace the background well (MW-11) data presented in Table 1 with MW-1 data based on the June 16, 2006 conference call EPA held with NJDEP.***

   Table 1, attached, has been updated based on Table 5-7 included in the Remedial Investigation Report and revised to reflect MW-1 as the background well.

5. ***Table 1 – Create a separate site-specific screening criteria for each media and present this in the table. The site-specific criteria would be the lowest federal or state screening criteria for that media unless the background number was greater, in that case the background number would be used. A benefit to this approach would be that the data would only need to be screened against the site-specific screening criteria instead of two to three different sets of criteria.***

   Table 1 has been revised to include separate screening criteria columns for each media.

6. ***Table A -1 of the SAP – The USEPA Remedial Project Manager should be revised to read Tanya Mitchell, Telephone Number: (212) 637-4362. Facsimile: (212) 637-4393. The USEPA Technical Oversight Contractor should be revised to read Sharon Budney, CDM Federal Programs Corporation, Raritan Plaza 1, Raritan Center, Edison, NJ 08818; Telephone: (732) 590-4662, Facsimile: (732) 225-6147.***

   Table A-1 of the SAP, attached, has been revised to reflect the above addresses and to include the new USEPA Remedial Project Manager, Renée Gelblat.

[1] Natural Attenuation Parameters include: total alkalinity, chloride, sulfate, sulfide, nitrate, nitrite, total phosphate, light hydrocarbons (methane, ethane, and ethene), total organic carbon (TOC), and dissolved organic carbon (DOC).

7. ***Table A-2 of the SAP – include data quality objectives for the additional samples to be analyzed for iron to evaluate the fate of the nano-scale iron particles introduced during pilot testing at MW-2A.***

   Table A-2 of the SAP, attached, has been revised to include the data quality objectives for the additional samples analyzed for TAL metals to evaluate the fate of the nano-scale iron particles.

8. ***Page 3, Section 2.3 – the new text indicates that "Additional samples will be collected from below the water table for analysis of iron to potentially evaluate the fate of nano-scale iron particles introduced during pilot testing at MW-2A". Provide additional details regarding total number of borings, location and depth of samples collected near well MW-2A. Based on field oversight, borings were completed during two separate mobilizations. Provide the analytical method used to analyze the iron samples. Tables A-5, A-6, A-8 and A-9 (of the SAP), may not require additional revisions if the analytical method used to analyze the iron samples is the same as the method used for the TAL metals samples (ILM04.1).***

   The methodology for analyzing iron is the same method as for the TAL metals. Section 2.3 is revised to read:

   > Each soil sample will be analyzed for TCL/VOC analytes as shown in Table A-3 and for 1,4-dioxane. The most impacted sample, based on field screening, or the sample collected at the water table in the event screening does not identify potential NAPL, will be analyzed for TCL/VOC analytes and for TAL metals to provide comprehensive analytical data for the most impacted sample. Additional samples from three borings were collected from intervals at or near the bottom of the well screening interval for analysis of iron by ILM04.1 to potentially evaluate the fate of nano-scale iron particles introduced during pilot testing at MW-2A. Sample collection requirements, holding times, quality assurance/quality control samples, sample shipping, and other analysis requirements will be as specified in the SAP. 1,4-Dioxane will be analyzed using EPA SW846 analytical method 8270 (SIM). Tables A-1 through A-9 of the SAP have been revised to reflect these protocols and the revised tables are provided in Appendix B.

   Three additional borings were taken near MW-2A, designated PTB1, PTB2, and PTB4, for evaluating the fate of nano-scale iron particles (see Figure 1).

9. ***Include a rationale for any additional sampling along with the analytical methods, and schedule.***

   Saturated soil sampling was conducted in two mobilizations: between April 24, 2006 and April 26, 2006 when borings were taken as proposed in the Revised Addendum to The Remedial Investigation/Feasibility Study Work Plan, as well as three borings to evaluate the fate of the nano-scale iron in MW-2A; and between May 24, 3006 and May 25, 2006 when six (6) additional borings were taken in the Former Waste Storage Tank area to further delineate the extent of impacted saturated soils. The second mobilization followed the same sampling and analysis procedures described in the Revised Addendum to The Remedial Investigation/Feasibility Study Work Plan. Results from both mobilizations are reported in the Remedial Investigation Report (Golder, 2006) and together provide an appropriate delineation of the impacted area.

Please do not hesitate to contact me if any questions arise during your review of this document.

Very truly yours,

GOLDER ASSOCIATES INC.

P. Stephen Finn, C.Eng.
Project Coordinator

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cc: Michael J. van Itallie, Esq. USEPA Office of Regional Counsel
James P. De Noble, NJDEP
Sharon Budney CDM Federal Programs Corporation
Lightman Yard PRP Group

LIGHTMAN DRUM
Screening Criteria

CAS No.	Compound	Water (µg/L)										Solids (mg/kg)								
		Groundwater							Surface water			Sediment					Soil			
		RL	MDL (j)	MCLs	NJ Class I-PL GWQS (Class IIA PQLs)	NJ Class IIA GWQS	Background Well concentration [e]	Groundwater Screening Criteria	NJ SWQC FW2 (2006 update)	Background *Surface Water* Sample [f]	*Surface Water* Screening Criteria	RL	MDL (j)	NJ DEP screening guidelines	Background Sediment Sample [h]	Sediment Screening Criteria	Non-Residential *Direct Contact* Soil Cleanup Criteria (NRDCSCC)	Impact to Ground *Water Soil* Cleanup Criteria (IGWSCC)	Background Soil Samples (i)	Soil Screening Criteria
Inorganics																				
57-12-5	Cyanide	10	1.357	200	6	100	ND	6	140	2 B	6	2	0.066	-	1.1 J	1.1	21000	-	ND	21000
7429-90-5	Aluminum	200	14.497	-	30	200	172 B	172	-	2300	2300	40	2.371	-	10200 J	10200	-	-	998	-
7439-89-6	Iron	5000	30.823	-	20	300	932	932	-	11300	11300	1000	6.377	-	12100 J	12100	-	-	1290	-
7439-92-1	Lead	3	1.161	15 (L)	5	5	ND	5	5	17.9	17.9	0.8	0.147	31	150 J	150	600	-	6.5	600
7439-95-4	Magnesium	5000	5.237	-	-	-	1960 B	1960	-	1510 B	1510	1000	0.677	-	406 J	406	-	-	23.3 B	-
7439-96-5	Manganese	15	0.306	-	0.4	50	5.3 B	5.3	-	47.3	47.3	3	0.066	-	26.4 J	26.4	-	-	4.2	-
7439-97-6	Mercury	0.2	0.037	2	0.05	2	ND	0.05	0.05	ND	0.05	0.1	0.006	0.2	0.36 J	0.36	270	-	ND	270
7440-02-0	Nickel	40	0.925	-	4	100	1.2 B	4	500	7.5 B	7.5	8	0.082	16	9.9 J	16	2400	-	0.46 B	2400
7440-09-7	Potassium	5000	11.806	-	-	-	934 B	934	-	1520 B	1520	1000	5.650	-	213 J	213	-	-	16.2 B	-
7440-22-4	Silver	10	0.670	-	1	40	ND	1	170	ND	1	2	0.046	1.00 (c)	ND	1	4100	-	ND	4100
7440-23-5	Sodium	5000	211.922	-	400	50000	69300	69300	-	6680	6680	1000	12.039	-	142 B	142	-	-	126 B	-
7440-28-0	Thallium	10	3.148	2	2	0.5	ND	2	0.24	ND	2	2	0.560	-	ND	-	2	-	ND	2
7440-36-0	Antimony	60	3.179	6	3	6	ND	3	5.6	ND	3	12	0.279	-	0.84 J	0.84	340	-	ND	340
7440-38-2	Arsenic	10	2.767	10	3	0.02	ND	3	0.017	2.9 B	3	2	0.323	6	10.8 J	10.8	20	-	0.54 B	20
7440-39-3	Barium	200	0.545	2000	200	2000	3.1 J	200	2000	89.9 B	200	40	0.125	-	106 J	106	47000	-	2.5 B	47000
7440-41-7	Beryllium	5	0.106	4	1	1	ND	1	6	0.3 B	1	1	0.009	-	0.93 J	0.93	2	-	0.055 B	2
7440-43-9	Cadmium	5	0.339	5	0.5	4	ND	0.5	3.4	ND	0.5	1	0.030	0.6	0.5 J	0.596	100	-	ND	100
7440-47-3	Chromium	10	0.571	100	1	70	2.3 B	2.3	92	2.8 B	2.8	2	0.156	26	15.1 J	26	-	-	1.7 B	-
16065-83-1	Chromium (III)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18540-29-9	Chromium (VI)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6100; 20 (d)	-	-	-
7440-48-4	Cobalt	50	0.408	-	-	-	ND	-	-	2.1 B	2.1	10	0.031	-	1.8 J	1.8	-	-	ND	-
7440-50-8	Copper	25	0.779	1300	4	1300	1.1 J	4	1300	11.5 B	11.5	5	0.182	16	32.7 J	32.7	600	-	1.1 B	600
7440-62-2	Vanadium	50	0.601	-	-	-	1.7 B	1.7	-	9.7 B	9.7	10	0.549	-	33.3 J	33.3	7100	-	3.9 B	7100
7440-66-6	Zinc	20	2.172	-	10	2000	26.3	26.3	7400	-	-	4	0.458	120	46 J	120	1500	-	1.6 B	1500
7440-70-2	Calcium	5000	40.620	-	-	-	9870	9870	-	4290 B	4290	1000	2.856	-	1160 J	1160	-	-	29 B	-
7782-49-2	Selenium	5	1.315	50	4	40	ND	4	170	2.8 B	4	1	0.338	-	3.4 J	3.4	3100	-	0.74 J	3100
Pesticides/PCBs																				
1024-57-3	Heptachlor Epoxide	0.05	0.002	0.2	0.2	0.004	ND	0.2	3.9E-05	ND	0.2	0.0017	0.0002	0.005	ND	0.0006	-	-	ND	-
1031-07-8	Endosulfan sulfate	0.1	0.003	-	0.02	40	ND	0.02	62	ND	0.02	0.0033	0.0002	-	ND	-	-	-	ND	-
1336-36-3	PCBs	-	-	-	0.5	0.02	-	0.5	6.4E-05	-	-	-	-	0.07	ND	0.0341	2	50	ND	2
11096-82-5	Aroclor-1260	1	0.098	-	-	-	ND	-	-	ND	-	0.033	0.0025	0.005	ND	0.005	-	-	ND	-
11097-69-1	Aroclor-1254	1	0.100	-	-	-	ND	-	-	ND	-	0.033	0.0020	0.06	ND	0.06	-	-	ND	-
11104-28-2	Aroclor-1221	2	0.518	-	-	-	ND	-	-	ND	-	0.067	0.0840	-	ND	-	-	-	ND	-
11141-16-5	Aroclor-1232	1	0.285	-	-	-	ND	-	-	ND	-	0.033	0.0187	-	ND	-	-	-	ND	-
12672-29-6	Aroclor-1248	1	0.148	-	-	-	ND	-	-	ND	-	0.033	0.0074	0.03	ND	0.03	-	-	ND	-
12674-11-2	Aroclor-1016	1	0.255	-	-	-	ND	-	-	ND	-	0.033	0.0044	0.007	ND	0.007	-	-	ND	-
309-00-2	Aldrin	0.05	0.004	-	0.04	0.002	ND	0.04	4.9E-05	ND	0.04	0.0017	0.0004	0.002	ND	0.002	0.17	50	ND	0.17
319-84-6	alpha-BHC	0.05	0.002	-	0.02	0.006	ND	0.02	0.0026	ND	0.02	0.0017	0.0001	0.006	ND	0.006	-	-	ND	-
319-85-7	beta-BHC	0.05	0.003	-	0.04	0.02	ND	0.04	0.0091	ND	0.04	0.0017	0.0004	0.005	ND	0.005	-	-	ND	-
319-86-8	delta-BHC	0.05	0.002	-	-	-	ND	-	-	ND	-	0.0017	0.0002	-	ND	-	-	-	ND	-
33213-65-9	Endosulfan II	0.1	0.004	-	0.04	40	ND	0.04	-	ND	0.04	0.0033	0.0001	-	ND	-	-	-	ND	-
50-29-3	4,4'-DDT	0.1	0.005	-	0.1	0.1	ND	0.1	0.00022	ND	0.1	0.0033	0.0001	0.007	ND	ND	9	500	ND	9
5103-71-9	alpha-Chlordane	0.05	0.002	-	0.5 [g]	-	ND	0	-	ND	0.5 (g)	0.0017	0.0001	0.007 (g)	ND	ND	-	-	ND	-
5103-74-2	gamma-Chlordane	0.05	0.002	-	0.5 [g]	-	ND	0	-	ND	0.5 (g)	0.0017	0.0001	0.007 (g)	ND	0.007	-	-	ND	-
53469-21-9	Aroclor-1242	1	0.151	-	-	-	ND	-	-	ND	-	0.033	0.0048	-	ND	-	-	-	ND	-
53494-70-5	Endrin Ketone	0.1	0.004	-	-	-	ND	-	-	ND	-	0.0033	0.0001	-	ND	-	-	-	ND	-
58-89-9	gamma-BHC (Lindane)	0.05	0.002	0.2	0.02	0.03	ND	0.02	0.98	ND	0.02	0.017	0.0001	0.003	ND	0.00094	2.2	50	ND	2.2
60-57-1	Dieldrin	0.1	0.004	-	0.03	0.002	ND	0.03	5.2E-05	ND	0.03	0.0033	0.0003	0.002	ND	0.002	0.18	50	ND	0.18
72-20-8	Endrin	0.1	0.003	2	0.03	2	ND	0.03	0.059	ND	0.03	0.0033	0.0001	0.003	ND	0.00267	310	50	ND	50
72-43-5	Methoxchlor	0.5	0.021	40	0.1	40	ND	0.1	40	ND	0.1	0.017	0.0006	-	ND	-	5200	50	ND	50
72-54-8	4,4'-DDD	0.1	0.004	-	0.02	0.1	ND	0.02	0.00031	ND	0.02	0.0033	0.0001	0.008	0.003 J	0.0034	12	50	ND	12
72-55-9	4,4'-DDE	0.1	0.005	-	0.01	0.1	ND	0.01	0.00022	ND	0.01	0.0033	0.0001	0.005	0.01 J	0.01	9	50	ND	9
7421-93-4	Endrin Aldehyde	0.1	0.004	-	-	-	ND	-	0.059	ND	-	0.0033	0.0001	-	ND	ND	-	-	ND	-
76-44-8	Heptachlor	0.05	0.004	0.4	0.05	0.008	ND	0.05	7.9E-05	ND	0.05	0.0017	0.0001	-	ND	-	0.65	50	ND	0.65
8001-35-2	Toxaphene	5	0.518	3	2	0.03	ND	2	0.00028	ND	2	0.017	0.0348	-	ND	-	0.2	50	ND	0.2
959-98-8	Endosulfan I	0.05	0.003	-	0.02	40	ND	0.02	-	ND	0.02	0.0017	0.0001	-	ND	-	-	-	ND	-

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LIGHTMAN DRUM
Screening Criteria

CAS No.	Compound	Water (µg/L)										Solids (mg/kg)								
		Groundwater							Surface water			Sediment				Soil				
		RL	MDL (j)	MCLs	NJ Class I-PL GWQS (Class IIA PQLs)	NJ Class IIA GWQS	Background Well concentration (e)	Groundwater Screening Criteria	NJ SWQC FW2 (2006 update)	Background Surface Water Sample (f)	Surface Water Screening Criteria	RL	MDL (j)	NJ DEP screening guidelines	Background Sediment Sample (h)	Sediment Screening Criteria	*Non-* Residential Direct Contact Soil Cleanup Criteria (NRDCSCC)	*Impact to* Ground Water Soil Cleanup Criteria (IGWSCC)	Background Soil Samples (i)	Soil Screening Criteria
Semivolatile Organics																				
100-01-6	4-Nitroaniline	25	-	-	-	-	ND	-	-	ND	-	0.83	0.018	-	ND	-	-	-	ND	-
100-02-7	4-Nitrophenol	25	-	-	-	-	ND	-	-	ND	-	0.83	0.063	-	ND	-	-	-	ND	-
100-52-7	Benzaldehyde	10	0.911	-	-	-	ND	-	-	ND	-	0.33	0.037	-	ND	-	-	-	ND	-
101-55-3	4-Bromophenyl-phenylether	10	0.424	-	-	-	ND	-	-	ND	-	0.33	0.022	-	ND	-	-	-	ND	-
105-60-2	Caprolactam	10	-	-	-	-	ND	-	-	ND	-	0.33	0.041	-	0.056 J	0.056	-	-	ND	-
105-67-9	2,4-Dimethylphenol	10	0.584	-	20	100	ND	20	380	ND	20	0.33	0.030	-	ND	-	10000	10	ND	10
106-44-5	4-Methylphenol	10	-	-	-	-	ND	-	-	5 J	5	0.33	-	-	ND	-	10000	-	ND	10000
106-47-8	4-Chloroaniline	10	0.577	-	10	30	ND	10	-	ND	10	0.33	0.031	-	ND	-	4200	-	ND	4200
108-60-1	2,2'-oxybis(1-Chloropropane)	10	0.307	-	10	300	ND	10	1400	ND	10	0.33	0.032	-	ND	-	10000	10	ND	10
108-95-2	Phenol	10	0.349	-	10	2000	ND	10	10000	ND	10	0.33	0.030	-	ND	-	10000	50	ND	50
111-44-4	Bis(2-chloroethyl) ether	10	0.322	-	7	0.03	ND	7	0.03	ND	7	0.33	0.020	-	ND	-	3	10	ND	3
111-91-1	Bis(2-chloroethoxy) methane	10	0.432	-	-	-	ND	-	-	ND	-	0.33	0.021	-	ND	-	-	-	ND	-
117-81-7	bis(2-Ethylhexyl)Phthalate	10	0.919	6	3	2	ND	3	1.2	ND	3	0.33	0.085	-	ND	-	210	100	ND	100
117-84-0	Di-n-octyl phthalate	10	0.414	-	10	100	ND	10	-	ND	10	0.33	0.050	-	1.2 J	1.2	10000	100	0.098 J	100
118-74-1	Hexachlorobenzene	10	0.324	1	0.02	0.02	ND	0.02	0.00028	ND	0.02	0.33	0.020	0.02	ND	0.02	2	100	ND	2
120-12-7	Anthracene	10	0.373	-	10	2000	ND	10	8300	ND	10	0.33	0.022	0.22	0.075 J	0.22	10000	100	ND	100
120-83-2	2,4-Dichlorophenol	10	0.442	-	10	20	ND	10	77	ND	10	0.33	0.026	-	ND	-	3100	10	ND	10
121-14-2	2,4-Dinitrotoluene	10	0.266	-	-	-	ND	-	0.11	ND	-	0.33	0.023	-	ND	-	-	-	ND	-
129-00-0	Pyrene	10	0.528	-	0.1	200	ND	0.1	830	ND	0.1	0.33	0.023	0.49	0.38 J	0.38	10000	100	0.023 J	100
131-11-3	Dimethylphthalate	10	0.266	-	-	-	ND	-	-	ND	-	0.33	0.023	-	ND	-	10000	50	ND	50
132-64-9	Dibenzofuran	10	0.388	-	-	-	ND	-	-	ND	-	0.33	0.022	-	0.02 J	0.02	-	-	ND	-
1912-24-9	Atrazine	10	0.477	3	0.1	3	ND	0.1	-	ND	0.1	0.33	0.025	-	ND	-	-	-	ND	-
191-24-2	Benzo(g,h,i)perylene	10	0.345	-	-	-	ND	-	-	ND	-	0.33	0.013	0.17	0.12 J	0.17	-	-	ND	-
193-39-5	Indeno(1,2,3-cd)pyrene	10	0.349	-	0.2	0.05	ND	0.2	0.038	ND	0.2	0.33	0.013	0.2	ND	ND	4	500	0.012 J	4
205-99-2	Benzo(b)fluoranthene	10	0.465	-	0.2	0.05	ND	0.2	0.038	ND	0.2	0.33	0.018	-	0.28 J	0.28	4	50	ND	4
206-44-0	Fluoranthene	10	0.374	-	10	300	ND	10	130	ND	10	0.33	0.025	0.75	0.39 J	0.39	10000	100	0.026 J	100
207-08-9	Benzo(k)fluoranthene	10	0.435	-	0.3	0.5	ND	0.3	0.38	ND	0.3	0.33	0.022	0.24	0.28 J	0.28	4	500	ND	4
208-96-8	Acenaphthylene	10	0.314	-	-	-	ND	-	-	ND	-	0.33	0.017	0.04 (o)	0.041 J	0.044	-	-	ND	-
218-01-9	Chrysene	10	0.378	-	0.2	5	ND	0.2	3.8	ND	0.2	0.33	0.020	0.34	0.26 J	0.26	40	500	0.018 J	40
50-32-8	Benzo(a)pyrene	10	0.326	0.2	0.1	0.005	ND	0.1	0.0038	ND	0.1	0.33	0.016	0.37	0.17 J	0.17	0.66	100	0.014 J	0.66
51-28-5	2,4-Dinitrophenol	25	5.315	-	40	10	ND	40	69	ND	40	0.83	0.165	-	ND	-	2100	10	ND	10
534-52-1	4,6-Dinitro-2-methylphenol	25	1.013	-	-	-	ND	-	13	ND	-	0.83	0.053	-	ND	-	-	-	ND	-
53-70-3	Dibenzo(a,h)anthracene	10	0.315	-	0.3	0.005	ND	0.3	0.0038	ND	0.3	0.33	0.013	0.06	ND	ND	0.66	100	ND	0.66
56-55-3	Benzo(a)anthracene	10	0.427	-	0.1	0.05	ND	0.1	0.038	ND	0.1	0.33	0.018	0.32	0.12 J	0.12	4	500	0.01 J	4
59-50-7	4-Chloro-3-methylphenol	10	0.422	-	-	-	ND	-	-	ND	-	0.33	0.022	-	ND	-	10000	100	ND	100
606-20-2	2,6-Dinitrotoluene	10	0.416	-	-	-	ND	-	-	ND	-	0.33	0.027	-	ND	-	-	-	ND	-
621-64-7	N-Nitroso-di-N-propylamine	10	0.535	-	10	0.005	ND	10	0.005	ND	10	0.33	0.027	-	ND	-	0.66	10	ND	0.66
67-72-1	Hexachloroethane	10	0.598	-	7	2	ND	7	1.4	ND	7	0.33	0.022	-	ND	-	100	100	ND	100
7005-72-3	4-Chlorophenyl-phenylether	10	0.421	-	-	-	ND	-	-	ND	-	0.33	0.024	-	ND	-	-	-	ND	-
77-47-4	Hexachlorocyclopentadiene	10	5.248	50	0.5	40	ND	0.5	40	ND	0.5	0.33	0.164	-	ND	-	7300	100	ND	100
78-59-1	Isophorone	10	0.268	-	10	40	ND	10	35	ND	10	0.33	0.018	-	ND	-	10000	50	ND	50
83-32-9	Acenaphthene	10	0.460	-	10	400	ND	10	670	ND	10	0.33	0.021	-	ND	-	10000	100	ND	100
84-66-2	Diethylphthalate	10	0.326	-	1	6000	ND	1	17000	ND	1	0.33	0.018	-	ND	-	10000	50	ND	50
84-74-2	Di-n-butylphthalate	10	0.385	-	1	700	ND	1	2000	ND	1	0.33	0.026	-	ND	-	10000	100	ND	100
85-01-8	Phenanthrene	10	0.347	-	-	-	ND	-	-	ND	-	0.33	0.025	0.56	0.18 J	0.18	-	-	ND	-
85-68-7	Butylbenzylphthalate	10	0.266	-	1	100	ND	1	150	ND	1	0.33	0.022	-	ND	-	10000	100	ND	100
86-30-6	N-Nitrosodiphenylamine	10	-	-	10	7	ND	10	3.3	ND	10	0.33	-	-	ND	-	600	100	ND	100
86-73-7	Fluorene	10	0.429	-	1	300	ND	1	1100	ND	1	0.33	0.016	0.19	ND	0.19	10000	100	ND	100
86-74-8	Carbazole	10	0.462	-	-	-	ND	-	-	ND	-	0.33	0.028	-	0.032 J	0.032	-	-	ND	-
87-68-3	Hexachlorobutadiene	10	0.848	-	1	0.4	ND	1	0.44	ND	1	0.33	0.023	-	ND	-	21	100	ND	21
87-86-5	Pentachlorophenol	25	1.303	1	0.1	0.3	ND	0.1	0.27	ND	0.1	0.83	0.073	-	ND	-	24	100	ND	24
88-06-2	2,4,6-Trichlorophenol	10	0.403	-	20	1	ND	20	0.58	ND	20	0.33	0.022	-	ND	-	270	10	ND	10
88-74-4	2-Nitroaniline	25	0.705	-	-	-	ND	-	-	ND	-	0.83	0.042	-	ND	-	-	-	ND	-
88-75-5	2-Nitrophenol	10	0.348	-	-	-	ND	-	-	ND	-	0.33	0.021	-	ND	-	-	-	ND	-
91-20-3	Naphthalene	10	0.461	-	2	300	ND	2	-	ND	2	0.33	0.018	0.16 (o)	0.036 J	0.16	4200	100	ND	100
91-57-6	2-Methylnaphthalene	10	0.353	-	-	-	ND	-	-	ND	-	0.33	0.024	0.07 (o)	0.05 J	0.07	-	-	ND	-
91-58-7	2-Chloronaphthalene	10	0.307	-	10	600	ND	10	1000	ND	10	0.33	0.018	-	ND	-	-	-	ND	-
91-94-1	3,3'-Dichlorobenzidine	10	0.433	-	30	0.08	ND	30	0.021	ND	30	0.33	0.020	-	ND	-	6	100	ND	6
92-52-4	1,1'-Biphenyl	10	-	-	10	400	ND	10	-	ND	10	0.33	0.019	-	ND	-	-	-	ND	-
95-48-7	2-Methylphenol	10	0.426	-	-	-	ND	-	-	ND	-	0.33	0.023	-	ND	-	10000	-	ND	10000

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LIGHTMAN DRUM
Screening Criteria

CAS No.	Compound	Water (µg/L)										Solids (mg/kg)								
		Groundwater							Surface water			Sediment					Soil			
		RL	MDL (J)	MCLs	NJ Class I-PL GWQS (Class IIA PQLs)	NJ Class IIA GWQS	Background Well concentration [e]	Groundwater Screening Criteria	NJ SWQC FW2 (2006 update)	Background Surface Water Sample [f]	Surface Water Screening Criteria	RL	MDL (J)	NJ DEP screening guidelines	Background Sediment Sample [h]	Sediment Screening Criteria	Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC)	Impact to Ground Water Soil Cleanup Criteria (IGWSCC)	Background Soil Samples (i)	Soil Screening Criteria
Semivolatile Organics																				
95-57-8	2-Chlorophenol	10	0.348	-	20	40	ND	20	81	ND	20	0.33	0.022	-	ND	-	5200	10	ND	10
95-95-4	2,4,5-Trichlorophenol	25	0.288	-	10	700	ND	10	1800	ND	10	0.83	0.023	-	ND	-	10000	50	ND	50
98-86-2	Acetophenone	10	0.285	-	10	700	ND	10	-	ND	10	0.33	0.019	-	ND	-	-	-	ND	-
98-95-3	Nitrobenzene	10	0.332	-	6	4	ND	6	17	ND	6	0.33	0.025	-	ND	-	520	10	ND	10
99-09-2	3-Nitroaniline	25	0.974	-	-	-	ND	-	-	ND	-	0.83	0.030	-	ND	-	-	-	ND	-
Volatile Organics																				
100-41-4	Ethylbenzene	0.5	0.459	700	2	700	ND	2	530	ND	2	0.01	0.0006	1.4	ND	1.4	1000	100	ND	100
100-42-5	Styrene	0.5	0.423	100	2	100	ND	2	-	ND	2	0.01	0.0004	-	ND	-	97	100	ND	97
10061-01-5	cis-1,3-Dichloropropene	0.5	0.130	-	-	-	ND	-	-	ND	-	0.01	0.0005	-	ND	-	-	-	ND	-
10061-02-6	trans-1,3-Dichloropropene	0.5	0.279	-	-	-	ND	-	-	ND	-	0.01	0.0006	-	ND	-	-	-	ND	-
106-46-7	1,4-Dichlorobenzene	0.5	0.317	75	5	75	ND	5	550	ND	5	0.01	0.0006	-	ND	-	10000	100	ND	100
106-93-4	1,2-Dibromoethane	0.5	0.284	0.05	0.03	0.0004	ND	0.03	-	ND	0.03	0.01	0.0006	-	ND	-	-	-	ND	-
107-06-2	1,2-Dichloroethane	0.5	0.249	5	2	0.3	ND	2	0.29	ND	2	0.01	0.0008	-	ND	-	24	1	ND	1
108-10-1	4-Methyl-2-pentanone	10	1.791	-	-	-	ND	-	-	ND	-	0.01	0.0011	-	ND	-	1000	50	ND	50
108-87-2	Methylcyclohexane	0.5	0.277	-	-	-	ND	-	-	ND	-	0.01	0.0007	-	ND	-	-	-	ND	-
108-88-3	Toluene	0.5	0.221	1000	1	1000	ND	1	1300	ND	1	0.01	0.0006	2.5	ND	2.5	1000	500	ND	500
108-90-7	Chlorobenzene	0.5	0.280	100	1	50	ND	1	210	ND	1	0.01	0.0006	-	ND	-	680	1	ND	1
110-82-7	Cyclohexane	0.5	0.303	-	-	-	ND	-	-	ND	-	0.01	0.0008	-	ND	-	-	-	ND	-
120-82-1	1,2,4-Trichlorobenzene	0.5	0.448	70	1	9	ND	1	21	ND	1	0.01	0.0006	-	ND	-	1200	100	ND	100
124-48-1	Dibromochloromethane	0.5	0.272	-	1	0.4	ND	1	0.4	ND	1	0.01	0.0007	-	ND	-	1000	1	ND	1
127-18-4	Tetrachloroethene	0.5	0.372	5	1	0.4	ND	1	0.34	ND	1	0.01	0.0006	0.45	ND	0.45	6	1	ND	1
1330-20-7	Xylenes (total)	0.5	-	10000	2	1000	ND	2	-	ND	2	0.01	-	0.12	ND	0.12	1000	67	ND	67
156-59-2	cis-1,2-Dichloroethene	0.5	0.350	70	1	70	ND	1	-	ND	1	0.01	0.0008	-	ND	-	1000	1	ND	1
156-60-5	trans-1,2-Dichloroethene	0.5	0.503	100	1	100	ND	1	590	ND	1	0.01	0.0006	-	ND	-	1000	50	ND	50
1634-04-4	Methyl-tert-butyl ether	0.5	0.270	-	1	70	ND	1	70	ND	1	0.01	0.0007	-	ND	-	-	-	ND	-
541-73-1	1,3-Dichlorobenzene	0.5	0.326	-	5	600	ND	5	2200	ND	5	0.01	0.0006	-	ND	-	10000	100	ND	100
56-23-5	Carbon Tetrachloride	0.5	0.424	5	1	0.4	ND	1	0.33	ND	1	0.01	0.0009	-	ND	-	4	1	ND	1
591-78-6	2-Hexanone	10	3.181	-	-	-	ND	-	-	ND	-	0.01	0.0015	-	ND	-	-	-	ND	-
Volatile Organics																				
67-64-1	Acetone	10	2.155	-	10	6000	ND	10	-	ND	10	0.01	0.0043	-	ND	-	1000	100	0.074	100
67-66-3	Chloroform	0.5	0.213	-	1	70	ND	1	68	ND	1	0.01	0.0009	-	ND	-	28	1	ND	1
71-43-2	Benzene	0.5	0.282	5	1	0.2	ND	1	0.15	ND	1	0.01	0.0007	0.34	ND	0.34	13	1	ND	1
71-55-6	1,1,1-Trichloroethane	0.5	0.341	200	1	30	ND	1	120	ND	1	0.01	0.0009	-	ND	-	1000	50	ND	50
74-83-9	Bromomethane	0.5	0.570	-	1	10	ND	1	47	ND	1	0.01	0.0014	-	ND	-	1000	1	ND	1
74-87-3	Chloromethane	0.5	0.675	-	-	-	ND	-	-	ND	-	0.01	0.0015	-	ND	-	1000	10	ND	10
75-00-3	Chloroethane	0.5	0.403	-	-	-	ND	-	-	ND	-	0.01	0.0016	-	ND	-	-	-	ND	-
75-01-4	Vinyl Chloride	0.5	0.713	2	1	0.08	ND	1	0.082	ND	1	0.01	0.0015	-	ND	-	7	10	ND	7
75-09-2	Methylene Chloride	0.5	0.310	5	1	3	ND	1	2.5	ND	1	0.01	0.0008	-	ND	-	210	1	ND	1
75-15-0	Carbon Disulfide	0.5	0.162	-	1	700	0.4 J	1	-	ND	1	0.01	0.0009	-	ND	-	-	-	ND	-
75-25-2	Bromoform	0.5	0.364	-	0.8	4	ND	0.8	4.3	ND	0.8	0.01	0.0007	-	ND	-	370	1	ND	1
75-27-4	Bromodichloromethane	0.5	0.258	-	1	0.6	ND	1	0.55	ND	1	0.01	0.0008	-	ND	-	46	1	ND	1
75-34-3	1,1-Dichloroethane	0.5	0.301	-	1	50	ND	1	-	ND	1	0.01	0.0011	-	ND	-	1000	10	ND	10
75-35-4	1,1-Dichloroethene	0.5	0.605	7	1	1	ND	1	4.7	ND	1	0.01	0.0010	-	ND	-	150	10	ND	10
75-69-4	Trichlorofluoromethane	0.5	0.338	-	1	2000	ND	1	-	ND	1	0.01	0.0013	-	ND	-	-	-	ND	-
75-71-8	Dichlorodifluoromethane	0.5	0.297	-	2	1000	ND	2	-	ND	2	0.01	0.0010	-	ND	-	-	-	ND	-
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.5	1.597	-	-	-	ND	-	-	ND	-	0.01	0.0009	-	ND	-	-	-	ND	-
78-87-5	1,2-Dichloropropane	0.5	0.503	5	1	0.5	ND	1	0.5	ND	1	0.01	0.0010	-	ND	-	43	-	ND	43
78-93-3	2-Butanone	10	3.894	-	2	300	ND	2	-	ND	2	0.01	0.0038	-	ND	-	1000	50	0.005 J	50
79-00-5	1,1,2-Trichloroethane	0.5	0.280	5	2	3	ND	2	13	ND	2	0.01	0.0007	-	ND	-	420	1	ND	1
79-01-6	Trichloroethene	0.5	0.421	5	1	1	ND	1	1	ND	1	0.01	0.0004	1.6	ND	1.6	54	1	ND	1
79-20-9	Methyl Acetate	0.5	1.616	-	0.5	7000	ND	0.5	-	ND	0.5	0.01	0.0009	-	ND	-	-	-	ND	-
79-34-5	1,1,2,2-Tetrachloroethane	0.5	0.397	-	1	1	ND	1	4.7	ND	1	0.01	0.0006	-	ND	-	70	1	ND	1
95-50-1	1,2-Dichlorobenzene	0.5	0.323	600	5	600	ND	5	2000	ND	5	0.01	0.0007	-	ND	-	10000	50	ND	50
96-12-8	1,2-Dibromo-3-chloropropane	0.5	1.215	0.2	0.02	0.02	ND	0.02	-	ND	0.02	0.01	0.0008	-	ND	-	-	-	ND	-
98-82-8	Isopropylbenzene	0.5	0.274	-	1	700	ND	1	-	ND	1	0.01	0.0005	-	ND	-	-	-	ND	-

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LIGHTMAN DRUM
Screening Criteria

CAS No.	Compound	Water (µg/L)										Solids (mg/kg)							
				Groundwater					Surface water					Sediment			Soil		
		RL	MDL (j)	MCLs	NJ Class I-PL GWQS (Class IIA PQLs)	NJ Class IIA GWQS	Background Well concentration [e]	Groundwater Screening Criteria	NJ SWQC FW2 (2006 update)	Background Surface Water Sample [f]	Surface Water Screening Criteria	RL	MDL (j)	NJ DEP screening guidelines	Background Sediment Sample [h]	Sediment Screening Criteria	Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC)	Impact to Ground Water Soil Cleanup Criteria (IGWSCC)	Background Soil Samples (i)	Soil Screening Criteria

Screening Criteria is the minimum of applicable standards, where available. Where background concentrations exceed the minimum applicable standard, the background value is the screening criteria. Because the Site is in Pinelands, the NJ Class IIA PQLs were chosen as the applicable standard

a) ACRONYMS: NJ= New Jersey; DEP= Department of Environmental Protection; RL= Contract Laboratory Program Reporting Limit; MDL = Method Detection Limit; MCL=Federal Maximum Contaminant Levels; PL GWQS= Pinelands Ground Water Quality Standards; NOAA TEL= National Oceanic and Atmospheric Administration Threshold Effects Level for Freshwater Sediment

b) Data Qualifiers: B= the analyte was detected at a concentration below the Contract Required Reporting Limit; J= The analyte was detected and is considered an estimated value

c) TEL is for Chlordane, irrespective of isomer

d) Criteria for ingestion and the inhalation exposure pathways respectively

e) Background Well is MW-1. Where there was one detection, that value was used. Where there were more than one detection, the maximum value was used.

f) Upgradient surface water sample is SW-01

g) values for Chlordane, not for specific isomer

h) Upgradient sediment sample is SD-01

i) background soil samples are the highest measured from samples SS-07, SS-08, and SS-09

j) MDL are generic values for the lab and instrument and reflect those typical for un-diluted and uncorrected samples. Actual MDLs will vary for each analysis

k) Region 9 PRG is for Mercury and compounds

l) EPA Federal Action Level

m) NJ Class IIA GWQS and PQLs promulgated November 7, 2005

n) NJ SWQS promulgated October 16, 2006

o) Taken from NJDEP Marine/Estuarine Sediment Screening guidelines

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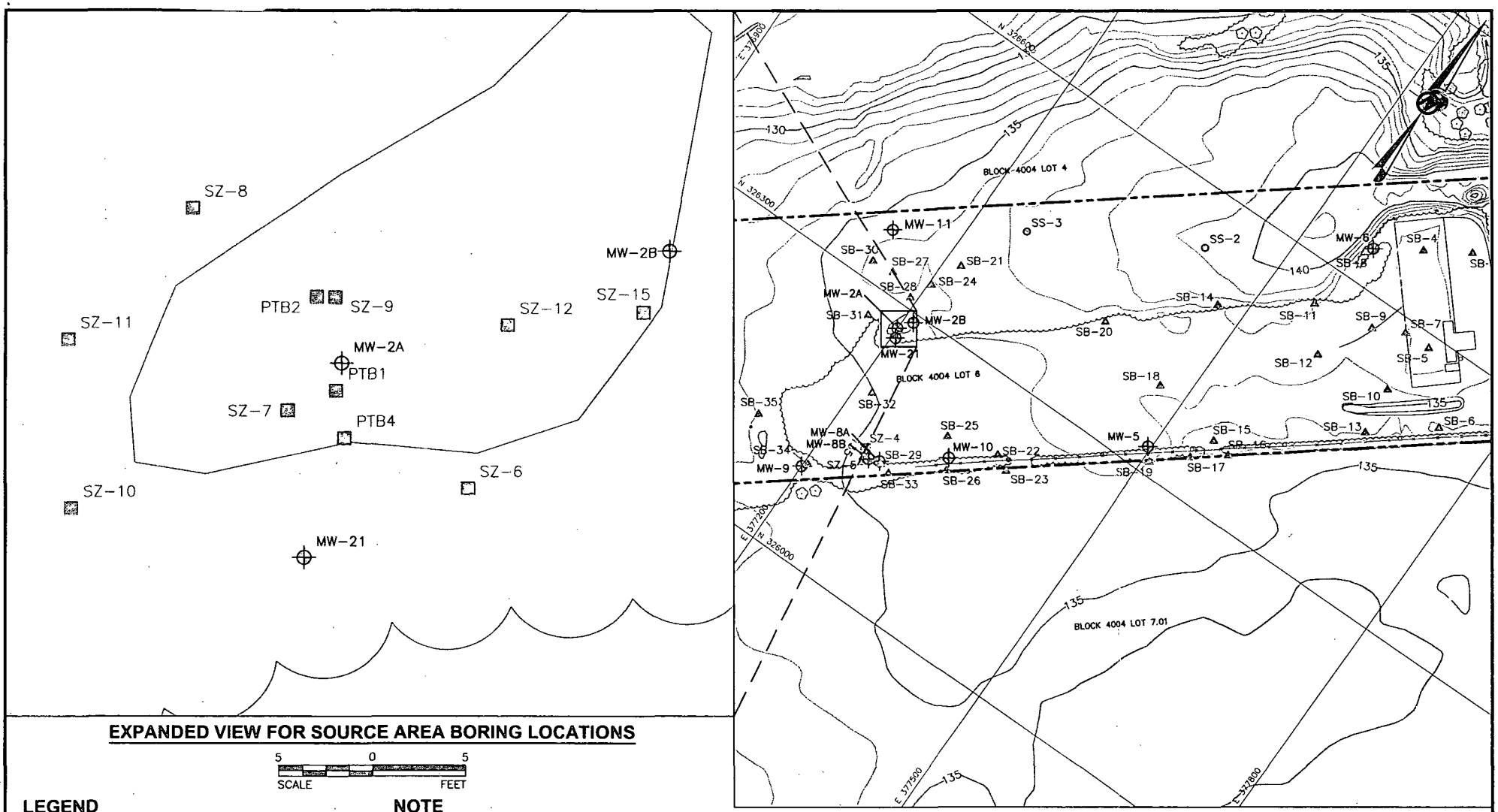

EXPANDED VIEW FOR SOURCE AREA BORING LOCATIONS

5 0 5
SCALE FEET

100 0 100
SCALE FEET

LEGEND

- SOIL BORING LOCATION (UNSATURATED SOIL)
- SHALLOW SOIL SAMPLING LOCATION (UNSATURATED SOIL)
- SATURATED SOIL BORING LOCATIONS (APRIL AND MAY 2006)
- MONITORING WELL

NOTE

1.) SATURATED SOIL BORING LOCATIONS BASED ON MEASUREMENTS TO SURVEYED MONITORING WELLS.

REFERENCES

1.) BASE MAP TAKEN FROM FILE 2702-01.DWG, TITLED "PLAN OF SURVEY", PROVIDED BY JAMES M. STEWART, INC.

2.) UNSATURATED SOIL BORING AND SOIL SAMPLE LOCATIONS SURVEYED BY JAMES M. STEWART, INC., NOVEMBER 2002.

3.) MONITORING WELLS SHOWN WERE BASED ON SURVEY INFORMATION SUPPLIED BY JAMES M. STEWART, INC.

Golder Associates
Philadelphia USA

SCALE	AS SHOWN
DATE	03/06/07
DESIGN	HAL
CADD	LKO
CHECK	RJI
REVIEW	PSF
FILE No.	0136054L005
PROJECT No.	013-6054
REV.	0

TITLE

SATURATED SOIL SAMPLING MAP EXPANDED VIEW NEAR MW-2A

LIGHTMAN DRUM SITE

FIGURE 1

Drawing file: 0136054L005.dwg Mar 06, 2007 - 9:04am

TABLE A-1
PROJECT PERSONNEL
LIGHTMAN DRUM RI/FS WORK PLAN
SAMPLING AND ANALYSIS PLAN

USEPA Remedial Project Manager:	Renée Gelblat USEPA Region II 290 Broadway 19th Floor NY, NY 10007-1866 Telephone: (212) 637-4414 Facsimile: (212) 637-4429
USEPA Technical Oversight Contractor:	Sharon Budney CDM Federal Programs Corporation Raritan Plaza 1 Raritan Center Edison, NJ 08818 Telephone: (732) 590-4662 Facsimile: (732) 225-6147
NJDEP Project Manager:	James DeNoble NJ Department of Environmental Protection Site Remediation Program 401 East State Street, 5th Floor P.O. Box 028 Trenton, NJ 08625 Telephone: (609) 777-4101 Facsimile: (609) 633-1439
Project Coordinator:	P. Stephen Finn, C.Eng. Golder Associates Inc 200 Century Parkway, Suite C Mount Laurel, NJ 08054 Telephone: (856) 793-2005 Facsimile: (856) 793-2006
RI Consultant Project Manager:	Robert J. Illes, P.G. Golder Associates Inc 200 Century Parkway, Suite C Mount Laurel, NJ 08054 Telephone: (856) 793-2005 Facsimile: (856) 793-2006
RI Manager and Site HSC:	Stuart Mitchell, P.G. Golder Associates Inc 200 Century Parkway, Suite C Mount Laurel, NJ 08054 Telephone: (856) 793-2005 Facsimile: (856) 793-2006
RI Quality Assurance Manager:	Peter Guy Golder Associates Inc 200 Century Parkway, Suite C Mount Laurel, NJ 08054 Telephone: (856) 793-2005 Facsimile: (856) 793-2006

TABLE A-1
PROJECT PERSONNEL
LIGHTMAN DRUM RI/FS WORK PLAN
SAMPLING AND ANALYSIS PLAN

RI Laboratory Coordinator and Data Validator:	Cindi Lucas Golder Associates Inc 200 Century Parkway, Suite C Mount Laurel, NJ 08054 Telephone: (856) 793-2005 Facsimile: (856) 793-2006
Chemtech Project Manager: Alternate Laboratory Project Manager:	Timothy F. Rutka Kurt Hummler Chemtech 284 Sheffield St. Mountainside, NJ 07092 Telephone: 908-789-1543 Facsimile: 908-789-8514
Chemtech Quality Assurance Director:	Krupa Dubey Chemtech 284 Sheffield St. Mountainside, NJ 07092 Telephone: 908-789-8900 ext. 208 Facsimile: 908-789-8514
CompuChem Project Manager: Alternate Laboratory Project Manager:	Marlene Swift Cathy Dover CompuChem 501 Madison Ave Cary, NC 27513 Telephone: (919) 379-4013 Facsimile: (919) 379-4040
CompuChem Quality Assurance Director:	Robert Meierer CompuChem 501 Madison Ave Cary, NC 27513 Telephone: (919) 379-4004 Facsimile: (919) 379-4050
Microseeps, Inc. Project Manager Alternate Laboratory Project Manager	Rebecca Hans Frank Phillips Microseeps, Inc. University of Pittsburgh Applied Research Center 220 William Pitt Way Pittsburgh, PA 15238 Telephone: (800) 659-2887 Facsimile: (412) 826-3433
Drilling Services	To Be Determined
Geoprobe/Field GC Services:	Todd Morgan S2C2, Inc. 150 Mount Bethel Road Building One Warren, NJ 07059 Telephone: (908) 542-1999 Facsimile: (908) 542-9288
Surveyor:	James M. Stewart, Inc. 9622 Evans Street Philadelphia, PA 19115 Telephone: (215) 969-1577 Facsimile: (215) 969-0338

TABLE A-2
PROPOSED REMEDIAL INVESTIGATION AND DATA QUALITY OBJECTIVES
LIGHTMAN DRUM RI/FS WORK PLAN

Remedial Investigation Activity	Matrix	Number of Samples	Parameters of Interest	Frequency of Monitoring	Purpose/Objective of Activity
Plume Definition	Groundwater	50 (see note 8)	VOCs	Once	Use field screening techniques to collect groundwater and identify areas of VOC contamination. These data will be used in identifying locations for placement of downgradient permanent monitoring wells.
Contamination Delineation	Surface Water	4	TCL/TAL, TSS, Hardness	Once	Collect definitive data to define nature and extent of contamination and for use in preparing the Baseline and Ecological Risk Assessments.
Contamination Delineation	Sediment	8	TCL/TAL, TOC, Grain Size	Once	Collect definitive data to define nature and extent of contamination and for use in preparing the Baseline and Ecological Risk Assessments.
Contamination Delineation	Soil	89 (see note 7)	TCL/TAL, TOC	Once	Collect definitive data to define nature and extent of contamination and for use in preparing the Baseline and Ecological Risk Assessments.
		24	hydrophobic dye "Oil Red O"	Once	Use field screening techniques to identify the presence of NAPL. These data will be used in identifying which intervals within a boring should be sampled for definitive data collection.
		3	TAL	Once	Collect definitive data to identify the extent to which nano-scale iron particles have traveled from MW-2A
		24	TCL VOCs, 1,4-dioxane, TAL metals	Once	Collect definitive data to define nature and extent of contamination and for use in preparing the Baseline and Ecological Risk Assessments.
Contamination Delineation	Groundwater	12 exiting on-property wells 1 new on-property well	TCL/TAL, 1,4-dioxane, Natural Attenuation parameters, and field parameters	Twice	Collect definitive data to define nature and extent of contamination, evaluate potential for Natural Attenuation processes, and for use in preparing the Baseline Risk Assessment.
		2 water supply wells	TCL/TAL, 1,4-dioxane, Natural Attenuation parameters, and field parameters	Twice	
		3 or 4 new off-property wells	TCL/TAL, Natural Attenuation parameters, and field parameters	Twice	
Hydrogeologic Testing	Groundwater	12 Existing wells and all new wells	TCL/TAL, Natural Attenuation parameters, and field parameters	Once	Collect definitive data to characterize aquifer hydraulic parameters
Surveying	NA	All soil locations and well locations	Elevation, northings and eastings	Once	Verify existing well elevations and provide accurate location and elevation data for new borings and wells

Notes:

1. The Target Compound List (TCL) VOC is defined in CLP Statement of Work OLC3.2, and SVOC, Pesticide and PCB lists are defined in CLP Statements of Work OLM04.3. The Target Analyte List (TAL) parameters are listed in CLP Statement of Work ILM04.1.
2. The methodologies that will be used for analysis are listed in SAP Tables A-3 and A-5.
3. Natural Attenuation parameters include: Total Alkalinity, Chloride, Sulfate, Sulfide, Nitrate, Nitrite, Total Phosphate Light Hydrocarbons (methane, ethane, ethene), Total Organic Carbon (TOC) and Dissolved Organic Carbon (DOC).
4. Quality control samples will be collected per matrix at the following frequency : 1 field duplicate per twenty primary samples; 1 MS/MSD pair per twenty primary + field duplicate samples; 1 rinsate blank per day per type of decontamination event where non-dedicated equipment is used. 1 trip blank per day when aqueous VOC samples are collected.
5. Field Parameters for groundwater monitoring include: pH, Temperature, Specific Conductivity, Turbidity, Dissolved Oxygen, Oxidation-Reduction Potential, and Ferrous Iron. Field parameters for soil screening include: VOC vapors and visual characteristics.
6. For VOC data generated by on-Site field screening via GC/MS, field duplicate samples will be collected at a 10% frequency. MS/MSDs, rinsate and trip blanks will not be collected for these screening samples.
7. During soil delineation, samples for grain size determination will be collected from 10% of the borings (approximately 4 samples to be collected).
8. Number of samples is approximate. Actual number of samples will be based on number of Geoprobe locations and depth to water encountered at each location.
9. Samples for TCL/TAL analysis will be evaluated for the presence of 1,2-diphenylhydrazine and benzidine. If quantitative analysis is required, samples will be analyzed using SW846 8270 SIM.

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