

TRC Reference Number: 115058

March 16, 2010

Kimberly N. Tisa, PCB Coordinator United States Environmental Protection Agency 5 Post Office Square, Suite 100 Mail Code: OSRR07-2 Boston, Massachusetts 02109-3912

RE: Polychlorinated Biphenyl (PCB) Remediation Notification

Nemasket Street Lots Clearing and Investigation New Bedford, Massachusetts 02740

Dear Ms. Tisa:

This letter serves as a notification letter submitted to the United States Environmental Protection Agency (EPA) by the City of New Bedford (City) regarding preparations to commence on-site brush and vegetation clearing and subsequent environmental investigation at the above-referenced location (see Figure 1 – Site Location Map). The environmental investigation proposed consists of geophysics followed by test pit exploration informed by the results of the geophysics work, as well as the results of soil sampling conducted by the BETA Group, Incorporated (BETA). This notification is intended to set forth the technical approach that will be utilized with regard to site clearing and the excavation of test pits. The approach detailed herein will be implemented pending EPA concurrence. The City views the activities proposed herein as interim steps toward the implementation of a full remedy for the subject parcels, which will be the subject of subsequent regulatory submittals to the EPA and the Massachusetts Department of Environmental Protection (MassDEP).

Soil data on the Nemasket Street lots was previously obtained from four soil borings by BETA in August, 2005 (see attachments at end of document).

The specific activities for which the City seeks EPA's concurrence are as follows:

- Management of cleared brush material to facilitate the progress of the environmental investigation; and
- PCB sampling and investigation.

Soil removal is not proposed at this time. The plan is to return soil from the test pit excavations to the excavation. Small amounts of soil disturbance may take place associated with brush clearing; however, the plan is to minimize such disturbance by cutting brush and trees to grade. No removal of soil from the Nemasket Street Lots will take place at this time (except for soil samples submitted for laboratory analysis).

Background

A brief summary of the maximum soil analytical results from the BETA soil samples collected in August 2005 is provided below for representative analytes in units of milligrams per kilogram (mg/kg):

Total PCBs: 619.04 mg/kg Arsenic: 33 mg/kgBarium: 4,690 mg/kg Cadmium: 43 mg/kg Chromium: 296 mg/kg Lead: 4,700 mg/kg Mercury: 2.01 mg/kg Selenium: 1.10 mg/kg Silver: 0.37 mg/kg Benzo(a)pyrene: 93 mg/kg

In addition, up to eight soil samples were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) for metals, with no leachate concentrations in excess of characteristic thresholds. Three out of 13 soil sample results submitted for PCB analysis by BETA exceeded 50 mg/kg total PCBs at concentrations of 619.04 mg/kg (noted above), 95.3 mg/kg, and 61.8 mg/kg. Three out of four soil borings advanced at the Nemasket Street Lots by BETA had a total PCB results in soil in excess of 50 mg/kg.

Technical Approach

The data collection described herein is an interim step toward the complete assessment of the subject parcels. TRC Environmental Corporation (TRC) will plan, implement and oversee the clearing and investigative work at the Nemasket Street Lots. The Nemasket Street Lot parcel identifications are summarized below and illustrated on Figure 2 – Site Map.

069 0092	069 0093	069 0086
069 0100	069 0088	069 0099
069 0091	069 0097	

Clearing. The City is prepared to perform clearing at the Nemasket Street Lots to the degree necessary to facilitate access for geophysics equipment and a backhoe or excavator for test pit inspections of the subsurface. An appropriately qualified contractor will be retained to clear small vegetative growth from the area using power equipment (a vehicle mounted brush hog). Larger growth will be addressed with chainsaws (manual labor). All vegetation will be cut/removed flush to the ground surface.

As a precaution, dust monitoring and dust suppression consistent with soil removal work conducted by TRC at other areas of the Parker Street Waste Site (PSWS) will be implemented to monitor and minimize/mitigate nuisance conditions.

All vegetation will be removed from the site for disposal as solid waste or managed through off-site composting. Alternatively, the vegetative matter may be chipped and spread on the lots to stabilized exposed surfaces.

Geophysics. Prior to test pit exploration of the Nemasket Street Lots, TRC will oversee the implementation of a combined Ground Penetrating Radar (GPR) and Electromagnetic Induction (EMI) investigation of the parcels. The purpose of this investigation is to locate medium to large buried metallic objects. The geophysics contractor will employ an SIR System-3000 and/or SIR System-2000 GPR unit with multiple antennas (depending upon the application/conditions). The systems have a real-time display and collection of data is recorded on a flash card which is downloaded and edited after the survey is completed. Real-time data acquisition will allow the marking of detected items in the field. For the EMI investigation, an EM Profiler EMP-400 electromagnetic induction tool will be utilized that will also provide real-time data collection allowing the marking of detected subsurface anomalies.

The results of the GPR/EMI investigation will be evaluated and anomalies warranting further investigation will be evaluated by test pit exploration.

Test Pit Exploration. The number of test pits to be excavated will depend in part on the results of the geophysics investigation.

The test pit excavations conducted previously at the Site generally measured approximately 2-feet wide by 8-feet long and, if feasible, were excavated to until native soil material (e.g., peat material) was encountered (i.e., approximately 7 to 9-feet below grade). A similar protocol will be followed at the Nemasket Street Lots unless site data/conditions require an alternative approach.

The soil will be removed from each test pit in approximately 1-foot flights. The material will be temporarily stockpiled on polyethylene sheeting for observation. As each flight is removed, the material will be examined using hand tools and identifiable or potentially identifiable fill

material will be segregated, field documented and photographed by TRC's field geologist/engineer. A subset of the identifiable or potentially identifiable material, where identified, will be retained for further expert forensic analysis. TRC will evaluate and log the geologic character of the soil samples consistent with the Burmeister (1958) method (consistent with the PSWS soil boring program conducted by TRC).

Air monitoring will be performed using a combination of real-time dust monitoring upwind and downwind of the work area. The dust monitoring will consists of TSI DustrakTM units (or equivalent) equipped with size-selective inlet for particles of 10 micrometers in diameter or less (PM10). Background samples will be collected for at least 15 minutes at each location prior to the start of site activities and the dust monitoring instruments will be zeroed daily before use and at the end of the day. Data will be logged at 60-second intervals and monitored periodically by field personnel excavation activities. Data will be downloaded daily. In addition, volatile organic compound (VOC) air monitoring will be performed using a photoionization detector (PID) to monitor for the presence of VOCs within the work area breathing zone.

Following completion, each test pit will be immediately backfilled with the stockpiled material, taking care to minimize mixing of horizons. All excavated material will be returned to the original test pit location. Each test pit will be subsequently surveyed by Land Planning, Incorporated of Hanson, Massachusetts. The locations will be plotted on an aerial photograph obtained from the Massachusetts Geographic Information System, and may also be incorporated into line drawings of the area.

Soil Sampling. No soil borings are proposed at this time. The City proposes to evaluate and initially delineate impacts from waste disposal activity that is informed by the results of the geophysics work, as well as the results of prior soil sampling conducted by BETA.

During the test pit investigation, TRC will conduct field screening of soil samples based on visual and olfactory observations, jar headspace readings using an appropriate calibrated PID, and professional judgment. Screening will be conducted consistent with TRC Standard Operating Procedures (SOPs) and general industry practice. TRC field investigators may collect soil samples for analysis to supplement the findings of the test pit program. Sample decisions will be based on professional judgment in consultation with the Licensed Site Professional (LSP). Where a soil sampling decision is made, one or more of the following analytical methods will be utilized for soil analysis, consistent with prior work conducted by TRC at the PSWS:

- Polychlorinated biphenyls (PCBs) as Aroclors by SW-846 Method 8082
- Polyaromatic hydrocarbons (PAHs) by SW-846 Method 8270C
- Massachusetts Contingency Plan (MCP) Metals/Hg antimony, arsenic, barium,

beryllium, cadmium, chromium, lead, nickel, selenium, silver, thallium, vanadium, zinc and mercury by SW-846 Methods 6010B/7471A.

As a contingency, TRC is prepared to submit soil samples for VOC analysis contingent upon the results of field screening and professional judgment. TRC will notify the City when such judgments are made. The following analytical method will be specified in such an event:

VOCs by Method SW-846 Method 8260B.

Dust Monitoring/Mitigation. Dust monitoring will be performed using a combination of real-time dust monitoring upwind and downwind of the work area during building clearing, test pit explorations, and soil boring advancement. A third instrument will be used to monitor dust levels between the work zone and the nearest property (e.g., residence, school, etc.) regardless of the wind direction. The dust monitoring instrumentation will consist of TSI DustrakTM units (or equivalent) equipped with size-selective inlet for particles of 10 micrometers in diameter or less (PM10). The continuous dust monitor uses a light scattering photometer to quantify particles and converts the counts to a concentration in units of milligrams per cubic meter (mg/m³). This instrumentation has an accuracy of 0.001 mg/m³ (1 ug/m³). The dust monitoring instruments will be placed in weatherproof cases with an omni-directional probe to minimize wind interference.

Background samples will be collected for at least 15 minutes at each location prior to the start of site activities and the dust monitoring instruments will be zeroed daily before use and at the end of the day. Data will be logged at 60-second intervals and monitored periodically by field personnel excavation activities. Data will be downloaded daily.

If sustained ambient dust levels exceed the EPA National Ambient Air Quality Standard (NAAQS) of 150 μ g/m³ at a downwind sampling location and/or at a location between the work zone and the nearest property (a sustained reading would consist of a reading lasting 15 minutes or longer), then dust suppression activities will be increased with a greater usage of water sprays.

Quality Control, Decontamination, Waste Management and Health/Safety. Representative quality control samples will also be collected during implementation of this scope of work. This will include field duplicate, matrix spike and matrix spike duplicate samples collected at a frequency of one per twenty samples.

All sampling equipment will be decontaminated prior to use and between each discreet sample in accordance with the EPA SOP for Sampling Porous Surface for PCBs (Revision 3, July 22, 2008) and self-implementing decontamination procedures as set forth under 40 CFR Part 761.79(c)(2)(i). This includes a detergent and water wash, water rinse and hexane rinse.

Equipment may also be wiped with a hexane soaked cloth as needed. A flow chart outlining the decontamination procedures is attached to this addendum.

Waste generated during the sampling event, including that generated as a result of decontamination procedures, will be handled and disposed of in accordance Federal, State and Local regulations. Non-liquid waste materials (e.g., PPE, rags, gloves, brushes, etc.) will be managed in accordance with 40 CFR Part 761.61(a)(5)(v). Liquid waste, specifically water associated with decontamination procedures, will be managed per 40 CFR Part 761.79(b)(ii) and 761.79(b)(iii), with a decontamination standard for water of less than 3 ug/L PCBs for discharge to navigable waters or treatment works and less than 0.5 ug/L PCBs for unrestricted reuse. Evidence of an appropriate permit will be obtained from the City prior to discharge of any wastewater to the treatment works. For wastewater greater than 3 ug/L PCBs, an appropriately licensed waste hauler will be contracted for the disposal of the spent decontamination fluids. A flow chart outlining the waste management and pollution prevention procedures is attached to this addendum.

The sampling will be performed in accordance with TRC's site-specific health and safety plan (HASP) which outlines the anticipated hazards associated with above referenced properties.

Conclusion

The City anticipates that the environmental investigation of the Nemasket Street Lots will begin as soon as possible following your concurrence on activities outlined in this letter. The sampling plan described herein is designed to help evaluate site conditions, support risk assessment and remedial planning activities and facilitate the forensic investigation of the contaminants. The full remedy will be the subject to subsequent regulatory submittals to the EPA and the MassDEP.

Certification Pursuant to 40 CFR §761.61(a)(3)(i)(E)

I certify that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the above referenced cleanup site, are on file at the offices of TRC Environmental Corporation, Wannalancit Mills, 650 Suffolk Street, Lowell, Massachusetts, and are available for EPA inspection.

If you have any questions concerning this letter, please do not hesitate to contact me at 508-991-6188.

Sincerely,

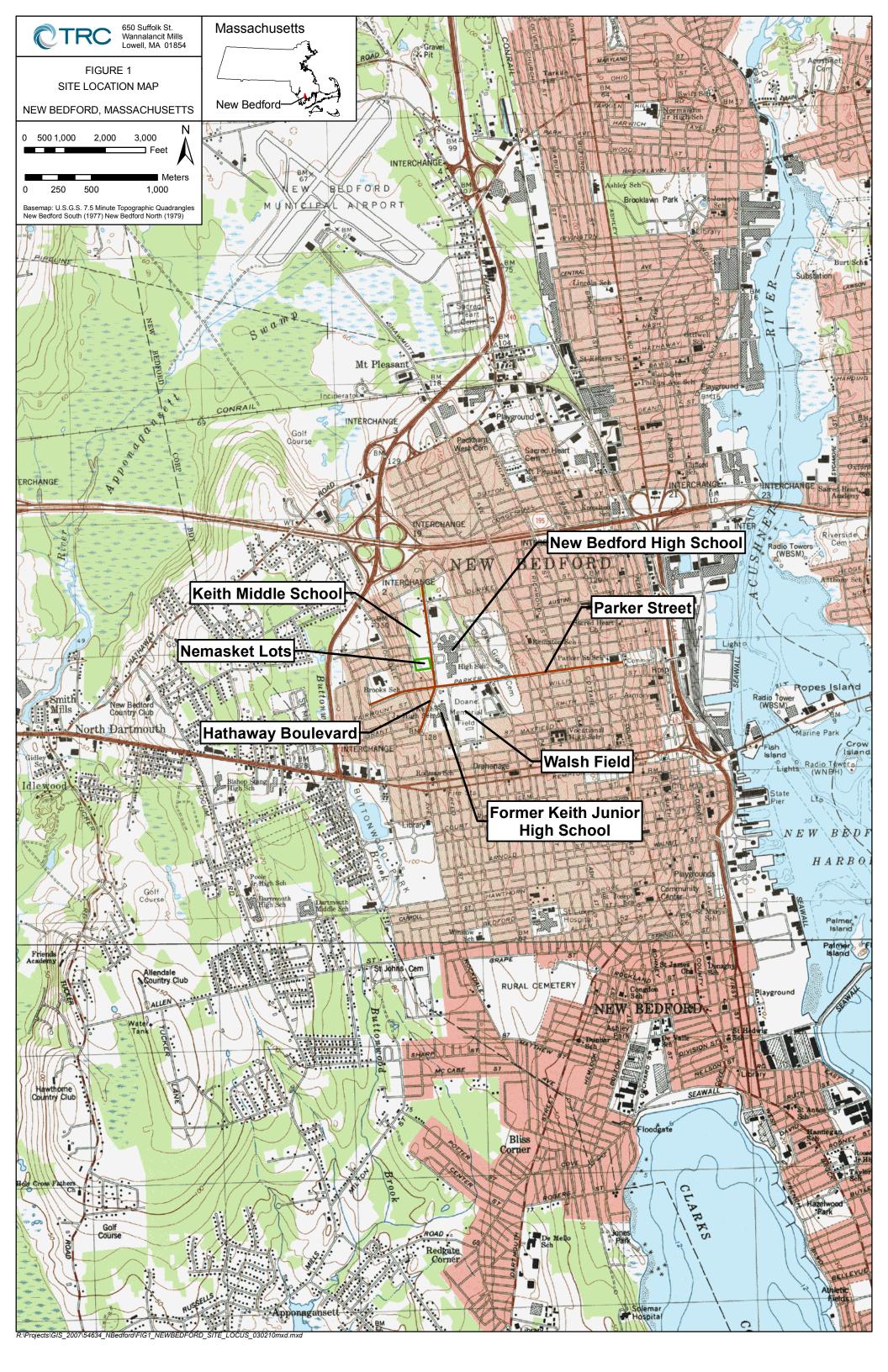
Scott Alfonse Director

cc. Molly Cote, Massachusetts Department of Environmental Protection (by electronic PDF)

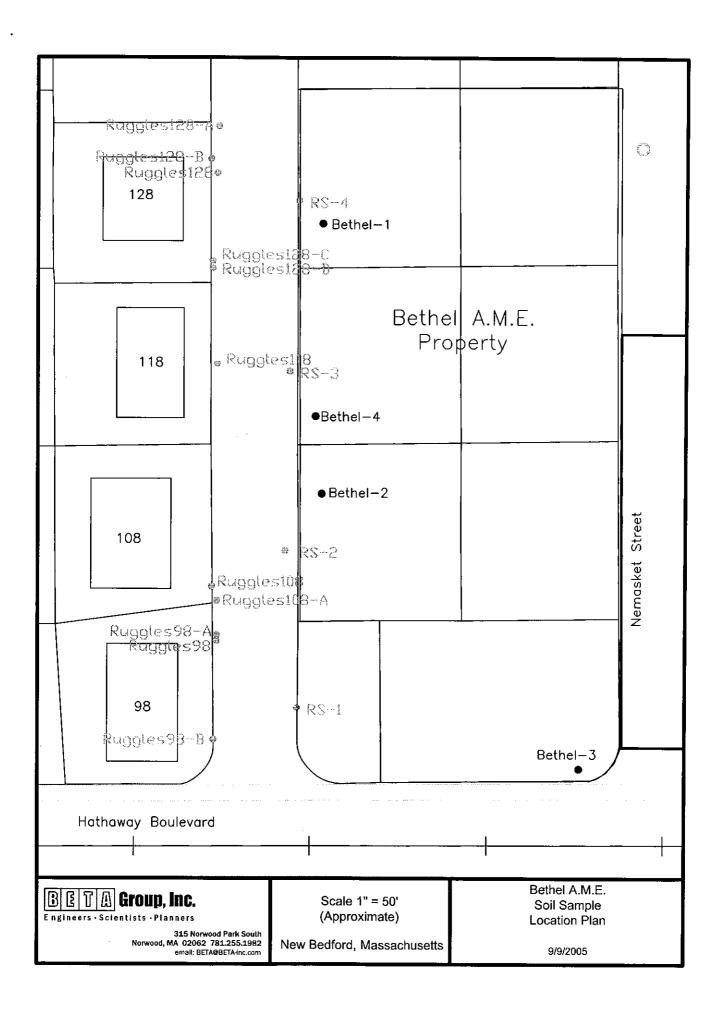
Cheryl Henlin, City of New Bedford (by electronic PDF) David M. Sullivan, LSP, CHMM, TRC (by electronic PDF)

Attachments

- Figure 1 Site Location Map
- Figure 2 Site Map
- BETA Soil Data from the Nemasket Street Parcels
- Flow Chart Decontamination Procedures
- Flow Chart Waste Disposal Procedures







~ = not analyzed Gray shading = concentration exceeds UCL	NU = Non-detect (method detection limit included if it exceeds RCs-1) Elevated method detection limits due to dilutions	NOTES:	Bethel-4-3-7'	Bethel-4-0:25-3'	Bethel-3-8.5-10'	Bethel-3-3-4.5"	Bethel-3-0,5-3"	Bethel:2-7-10'	Bethel-2-3-7'MSD	Bethel-2-3-7'MS	DUPLICATE 300 (Bethel 2-3-7)	Bethel-2-3-7'	Bethel-2-0.5-3	Bethel-1-7-8.5'	Bethel-1-3-7*	Bethel-1-1-3'	Sample Identification					
ceeds UCL	due to dilutions		3-7	0.25-3	8.5-10	3-4.5	0.5-3	7.10	3-7	3-7	3-7	3-7	0.5-3	7-8.5	3-7	1-3	Depth					
	I If it exceed		8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	Date					
	S RCG-1)		8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	Date Analyzed	10*UTS	ncr	RCS-1		
			-	ND	,	7	ND	ND] ~	~	ND	N	ND	N	S	N		23,000	į	50,000	(ug/kg)	n-Nitrosodimethylamine
			~	ND	,	,	NO	S	~	ı	ND	ND	ND	ND	8	8		160,000	ı	500,000	(ug/kg)	Pyridine
			,	420	,	1	ND	NO	ł	ı	ND	ND	ND	ND	NB NB	S		62,000	10,000,000	60,000	(ug/kg)	Phenol
				ð	ì	,	NO	ND	1		S	ND	ND	ND	ND	ND		140,000	ŧ	1,000,000	(ug/kg)	Aniline
			,	ND	,	,	NO	ND	1	,	8	ND (1100)	ND	B	ND	ND (1100)		60,000	7,000	700	(ug/kg)	bis(2-Chloroethyl)ether
			į	ND	ı	,	ND	ND	ì	,	ND (1200)	ND (1100)	No	S	8	ND (1100)		57,000	10,000,000	700	(ug/kg)	2-Chlorophenol
			,	ND	,	1	S	М	1	,	8	N	S	8	8	8		60,000	5,000,000	Τ.	(ug/kg)	1,3-Dichtorobenzene
			,	NO	,	,	ON	S	1	,	S	S	ND	8	S	R		60,000	2,000,000	2,000	(ug/kg)	1,4-Dichlorobenzene
			,	S	,	,	ZO	ND	ł	ì	S	Ą	NO	8	8	N		60,000	5,000,000	100,000	(ug/kg)	1,2-Dichlorobenzene
			,	190	,	,	ND	B		,	g	g	ND	S	S	Ą		56,000	,	500,000	(ug/kg)	2-Methylphenol
			,	NO		ı	NO	ND	,	,	g	ND (1100)	B	S	S	ND (1100)		72,000	90,000	700	(ug/kg)	bis(2-chloroisopropyl)ether
			ŀ	78	,	,	NO.	ş	,	ľ	8	S	3	Ş	S	Г		56,000	_	50,000	(ug/kg)	4-Methylphenol
			,	NO	,	,	ND	8	1	1	8	S	8	Ş	S	S		140,000	_	50,000	(ug/kg)	n-Nitroso-di-n-propylamine
			,	S	,	,	ND	B	,	,	S	8	Š	8	S	ND		300,000	500,000	6,000	(ug/kg)	Hexachloroethane

Gray shading = concentration exceeds UCL Black shading = concentration exceeds 10*UTS

NOTES:	Bethel-4-3-7'	Bethel-4-0,25-3"	Bethel-3-8.5-10'	Bethel-3-3-4.5"	Bethel-3-0:5-3		Detre-2-3-7 MOD	Defroi o o 71 ACD	Bethel-2-3-7'MS	DUPLICATE 300 (Bethel 2-3-7")		Bethel-2-0.5-3	Bethel-1-7-8.5	Bethel-1-3-7'	Bethel-1-1-3'	Sample Identification					
	3-7	0.25-3	8.5-10	3-4.5	0.5-3	2.74	7 40	2.7	3-7	3-7	3-7	0.5-3	7-8.5	3-7	1-3	Depth					
	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	C. F.C.	80200	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	Date					
200	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	00000	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	50/05/8	8/30/05	8/30/05	8/30/05	Date Analyzed	10*UTS	חכר	RCS-1		
	•	NO	,	·	NU.		5	,	,	8	S	ND	ð	8	Z C		140,000	1	50,000	(ug/kg)	Nitrobenzene
	ı	ND		ł	20	j	CIN	,	'	R	B	ND .	S	용	Z		NA	1	100,000	(ug/kg)	Isophorone
	, 	ND	ı	1	NU		8	,	ı	ND	S	ND	8	S	č		130,000	ì	100,000	(ug/kg)	2-Nitrophenol
	ł	ND	ı	 ,	UU		N	,	1	ND (5900)	ND (11000)	260 (J)(D)	g	S	ND (1100)		140,000	10,000,000	700	(ug/kg)	2,4-Dimethylphenol
		NO	,	,	NO		8	ł		ND (8900)	ND			8	č		NA	ı	1,000,000	(ug/kg)	Benzoic acid
	,	UN	1	,	NO	5	8	ı	2	NO	8	NO	g	S	2	5	72,000	~	500,000	(ug/kg)	bis(2-Chloroethoxy)methane
	<u>,</u>	NU	1	ļ	NU		ON	ı	~	N	S	ND	N	8	2	5	140,000	900,000	10,000	(ug/kg)	2,4-Dichlorophenol
	۱,	NU	1		NO	בכב	8	~	l l	S	R	NO	S	8	2	5	190,000	10,000,000	100,000	(ug/kg)	1,2,4-Trichlorobenzene
	,	4,200	~	,	1,000	4 200	B	7	,	7,000	S	12,000	S	120	-000	1000	56,000	ı	4,000	(ug/kg)	Naphthalene
	,	NU	1	,	, INC	20	8	,	,	8	ND (1100)	ND	N.	Z	NO	100	160,000	ı	1,000	(ug/kg)	4-Chloroaniline
	,	NO.	,	,	180	Z	8	ı	,	S	Z	NG	Z	3	T		56,000	400,000	٠	┺	Hexachlorobutadiene
	,	Ψ			1	CCN	8	ì	,	S	NO	ND	N	3	é		140,000	,	1,000,000	(ug/kg)	4-Chloro-3-methylphenol
	Į,	3,100	3 2		200	450	ON	,	ŧ	4,000	Ę	NO	NO	200	3	970	NA	10,000,000	4,000	(ug/kg)	2-Methylnaphthalene
		UNIVE			,	CN.	ND	ì	,	Š	2	N	ő	á			24,000	+	50,000	(ug/kg)	Hexachlorocyclopentadiene

ND = Non-detect (method detection limit included if it exceeds RCS-1) Elevated method detection limits due to dilutions = not analyzed

Gray shading = concentration exceeds UCL Black shading = concentration exceeds 10*UTS

~ = not analyzed	Elevated method detection limits due to dilutions	NOTES: Non-detect (method detection limit included if it exceeds RCS-1)	Bethel-4-3-7'	Bethel-4-0.25-31	Bethel-3-8.5-10'	Bethel-3-3-4.5"	Bethel-3-0.5-3"	Bethel:2-7-10"	Bethel-2-3-7'MSD	Bethel-2-3-7'MS	DUPLICATE 300 (Bethel 2-3-7')	Bethel-2-3-7'	Bethel-2-0.5-3"	Bethel-1-7-8.5'	Bethel-1-3-7'	Bethel-1-1-3'	Sample Identification	i				
	due to dilutio	on limit includ	3-7	0.25-3	8.5-10	3-4.5	0.5-3	7-10	3-7	3-7	3-7	3-7	0.5-3	7-8.5	3-7	1-3	Depth					
	ช	led if it excee	8/23/05	3 8/23/05	-	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	Н	8/23/05	8/23/05	n Date					
		ds RCS-1)	8/30/05	8/30/05	Г	8/30/05		8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05		8/30/05	Date Analyzed	10*UTS	UCL	RCS-1		
				S		,	NO	8	1	?	N	N	ND	S	N	N		74,000	2,000,000	3,000	(ug/kg)	2,4,6-Trichlorophenol
			,	ND	1	,	B	8	ı	≀	ND	ND (2200)	NO	N	N	R		74,000	10,000,000	2,000	(ug/kg)	2,4,5-Trichlorophenol
			ì	ON	1	ı	ND	8	1	,	N	S	ND	8	8	S		56,000	~	1,000,000	(ug/kg)	2-Chloronaphthalene
			,	ND	1	,	NO	8	,	į	S	S	ND	ND	N	S		140,000	Į	1,000,000	(ug/kg)	2-Nitroaniline
			1	ON	3	,	ND	ON	1	1	N	S	ND	3	S	ND		280,000	10,000,000	7,000	(ug/kg)	Dimethyl phthalate
			~	2,200 -	1	,	97	13,000	~	1	1,400	S	ND	110	8	110		34,000	10,000,000	100,000	(ug/kg)	Acenaphthylene
			,	NU	j 1	ļ	NO	NO	,	,	8	Š	NU	Z	8	Š		280,000	,	100,000	(ug/kg)	2,6-Dinitrotoluene
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			,	4,000	2	ı	1,400	NO	ł	ı	18,000	2,600	28,000	NO	300	4,200		34,000	10,000,000	20,000	(ug/kg)	Acenaphthene
			,	NU.	1	1	NU	NO	1	,	ND (3000)	ND (5400)	30	ND (3600)	NU	Z	j	1,600,000	900,000	3,000	(ug/kg)	2,4-Dinitrophenol
			,	CIN		,			1	,	Ľ	╀		-	Z	╀	-	290,000	,	100,000 1	•	4-Nitrophenol
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			,	000	200	; ;	NC	į	;	,	ND (3000)	(1100)	i Z	Z	Z			280,000	70,000	ò	(ug/kg)	2,4-Dinitrotoluene

NOTES:	Bethel-4-3-7*	Bethel-4-0:25-3*	Bethel-3-8.5-10*	Bethel-3-3-4.5"	Bethel-3-0,5-3"	Bethel-2-7-10'	Bethel-2-3-7'MSD	Bethel-2-3-7'MS	DUPLICATE 300 (Bethel 2-3-7)	Bethel-2-3-7'	Bethel-2-0:5-3:	Bethel-1-7-8.5'	Bethel-1-3-7'	Bethel-1-1-3'	Sample Identification					
ة المجادية المجادة	3-7	0.25-3	8.5-10	3-4.5	0.5-3	7-10	3-7	3-7	3-7	3-7	0.5-3	7-8.5	3-7	1-3	Depth					
it ownords	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	Date					
BCS 4)	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	Date Analyzed	10*UTS	UCL	RCS-1		
	1	ND	ł	ì	NO	ND	ł	ł	ND	ND (1100)	ND	ND	ND	ND (1100)		280,000	UCL 10,000,000	700	(ug/kg)	Diethyl phthalate
	*	100 100 100 100 100 100	ł	ł	1,500	ND	ı	ł	16,000	2,400	25,000	ND	330	4,200		34,000	10,000,000	400,000	(ug/kg)	Fluorene
	ì	ND	ı	ı	. ON	ND	ı	ł	N	ND	ND	N	N	B		NA	1	1,000,000	(ug/kg)	4-Chlorophenyl phenyl ether
	ł	NO.	į	*	NO	NB	ł	ì	Š	ND	ND	N	ND	N		280,000	*	1,000,000	(ug/kg)	4-Nitroaniline
	~	ND	ì	1	NO	NO	ł	≀	8	ND) ND	S	8	N		1,600,000	~	50,000	(ug/kg)	4,6-Dinitro-2-methylphenol
	ł	ND	ì	ł	NO	ND	ì	ł	용	8	NO:	8	용	8		130,000	~	100,000	(ug/kg)	n-Nitrosodiphenylamine
	ŧ	UD	ł		DN	ND	*	ŧ	B	B		A	B	NB		150,000	~	100,000	(ug/kg)	4-Bromophenyl phenyl ether
	ł	ND	ı	1	ND	ND .	1	ŧ	ND	ND (1100)	ND	ND (720)	N	ND (1100)		100,000	30,000	700	(ug/kg)	Hexachlorobenzene
	ł	ND	ł	ı	ND	ND	ı	ł	8	ND (5400)	ND	S	S	S		74,000	400,000	5,000	(ug/kg)	Pentachlorophenol
	ı	63,000	,	1	15,000	72,000	ŧ	ł	130,000	22,000	220,000	7,600	3,200	41,000		56,000	10,000,000	100,000	(ug/kg)	Phenanthrene
	į	18,000	ì	ı	3,400	18,000	ì	ŧ	28,000	5,600	50,000	1,500	800	8,800		34,000	10,000,000	100,000	(ug/kg)	Anthracene

ND = Non-detect (method detection limit included if it exceeds RCS-1)
Elevated method detection limits due to dilutions
~ = not analyzed
Gray shading = concentration exceeds UCL
Black shading = concentration exceeds 10*UTS

NOTES:	Bethel-4-3-7'	Bethel-4-0:25-3"	Bethel-3-8.5-10"	Bethel-3-3-4.5"	Bethel-3-0:5-3"	Bethel-2-7-10"	Bethel-2-3-7'MSD	Bethel-2-3-7'MS	DUPLICATE 300 (Bethel 2-3-7')	Bethel-2-3-7'	Bethel-2-0.5-3"	Bethel-1-7-8.5'	Bethel-1-3-7'	Bethel-1-1-3	Sample Identification					
nit included	3-7	0,25-3	8.5-10	3-4.5	0.5-3	7-10	3-7	3-7	3-7	3-7	0.5-3	7-8.5	3-7	<u>ا</u>	Depth					
if it exceeds	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	8/23/05	Date					
RCS-1)	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	SU108/8	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	8/30/05	Date Analyzed	10*UTS	UCL	RCS-1		
	,	730	1	ı	6,000	NU	ì	,	NB NB	ND	ND	ON	ND	3,300		280,000		50,000	(gy/gu)	Di-n-butylphthalate
		67,000	ì	ì	6,300	ייטיטיט	~	,	170,000	32,000	280,000	NO	3,200	5,100		34,000	10,000,000	1,000,000	(ug/kg)	Fluoranthene
	1	ND	ł	1	NO	Onnoce) alk	, n	ı	ND (36000)	ND (65000)	ND	R	8	ND (6/000)		NA	~	10,000	(ug/kg)	Benzidine
		47,000	1	1	13,000		70 000	,	140,000	21,000		7,800	9,600	34,000		82,000	10,000,000	700,000	(ug/kg)	Pyrene
	1	ND	Ī	ì	79	١.	- District	,	S	NO	ND	8	8	Z		280,000		100,000	(ug/kg)	Butyl benzyl phthalate
	ł	NO	,	,	W. W.	110	CIN	ł	S	ND (1100)	ND	N O	S	(00) t) UN		NA	30,000	1,000	(ug/kg)	3,3'-Dichlorobenzidine
	,	30,000	1	ş	7,000	30,000	~ ~	2	68,000	15,000	120,000	3,700	3,800	20,000	200	34,000	100,000	700	(ug/kg)	Benzo(a)anthracene
	ł	23,000	1	i	0,100	,000	40 000	1	54,000	11,000	98,000	2,900	3,100	1,000	2000	34,000	400,000	700	(ug/kg)	Chrysene
	ì	1,309		1	- A00		- CO	ı	Z	Ę	NO	Š	3,700	100	5	280,000	10,000,000	100,000	(ug/kg)	bis(2-Ethylhexyl)phthalate
	~	NU	1	1	NO.		Z) 2	: 1	N.	ž	NC	N		i	5	280,000	~	1,000,000	(ug/kg)	Di-n-octyl phthalate
	1	92,000	~ ~~	1	2,000	000	40.000		91,000	000,81	STOUDON	3,900	4,500	24,000	24 200	68,000	100,000	700	(ug/kg)	Benzo(b)fluoranthene
	,	- 000	2		2,000	200	-CN	,	28,000	6,100	39,000	1,300	1,500	0,100	0 400	68,000	400,000	7,000	(ug/kg)	Benzo(k)fluoranthene

ND = Non-detect (method detection limit included if it exceeds RCS-1)
Elevated method detection limits due to dilutions
- = not analyzed
Gray shading = concentration exceeds UCL
Black shading = concentration exceeds 10°UTS

Benzo(a)pyrene

Indeno(1,2,3-cd)pyrene

Dibenz(a,h)anthracene (Dibenzo(a,h)anthracene)

Benzo(g,h,i)perylene

			10*015	34,000	34,000	02,000	10,000
Sample Identification	Depth	Date	Date Analyzed				
Bethel-1-1-3'	1-3	8/23/05	8/30/05	16,000	7,400	2,500	6,200
Bethel-1-3-7	3-7	8/23/05	8/30/05	3,700	2,300	850	2,000
Bethel-1-7-8.5'	7-8.5	8/23/05	8/30/05	2,700	1,100	ND (720)	850
Bethel: 2-0.5-3	. 0.5	8/23/05	8/30/05	93,000	46,000	טא	39,000
Bethel-2-3-7'	3-7	8/23/05	8/30/05	12,000	5,000	1,800	4,200
DUPLICATE 300 (Bethel 2-3-7)	3-7	8/23/05	8/30/05	55,000	35,000	13,000	30,000
Bethel-2-3-7'MS	3-7	8/23/05	8/30/05	1	ŧ	1	1
Bethel-2-3-7'MSD	3-7	8/23/05	8/30/05	,	,	ł	ı
Bethel-2-7-10"	7-10	8/23/05	8/30/05	33,000	ND		NO
Bethel-3-0:5-3	0.5-3	8/23/05	8/30/05	5,000	3,200	1,200	8,000
Bethel-3-3-4.5"	3-4.5	8/23/05	8/30/05	•	,	ł	?
Bethel-3-8.5-10'	8.5-10	8/23/05	8/30/05	ł		ł	ł
Bethel-4-0.25-3*	0.25-3	8/23/05	8/30/05	22,000	8,000	2,900	6,600
Bethel-4-3-7'	3-7	8/23/05	8/30/05	ì	₹	,	,
NOTES:							
ND = Non-detect (method detection limit included if it exceeds RCS-1)	nit included	if it exceeds	RCS-1)				
= not analyzed	didadio						
Gray shading = concentration exceeds UCL	į Γ						
Disck shading = concentration exceeds 10*UTS	20117						

Bethel AME PCBs1

Polychlorinated Biphenyls (PCBs) Bethel AME Property Samples

		Turnkey A	RCS-1 Turnkey Acceptance Limit UCL	Total PCBs (mg/kg) 2.00 50.0	PCB-1221 (mg/kg)	PCB-1232 (mg/kg)	PCB-1016/ 1242 (mg/kg)	PCB-1248 (mg/kg)	PCB-1248 PCB-1254 (mg/kg) (mg/kg)	PCB-1260 (mg/kg)		30 PCB-1262 PCB-1268) (mg/kg) (mg/kg)
Sample ID	Depth	Collection Date	Date Analyzed						:	-		
Bethel-1-1-3'	1-3	8/23/05	8/30/05	8.14	ND	ND.	ND:	1.49	6.651		Z D	ND ND
Bethel-1-3-7'	3-7	8/23/05	8/30/05	95,30	ND	ND	N	47.71	47.585		3	+
Bethel-1-7-8.5'	7-8.5	8/23/05	8/30/05	13.31	ND	ND	S	N N	13.308		ND I	+
Bethel-2-0.5-3'	0.5-3	8/23/05	8/30/05	2.71	ND	ND	ND	N	2.706		S	
Bethel-2-3-7'	3-7	8/23/05	8/30/05	1.32	ND.	R	R	R	1.321		N	+
DUPLICATE 300 (Bethel 2-3-7)	3-7	8/23/05	8/30/05	7.0	ND	ND	ND	ND	7.034		N N	1
Beinel-2-3-/ MS	3-7	8/23/05	8/30/05	1.81	ND	B	ND	ND	1.814		ND	
Betnel-2-3-7 MSD	3-7	8/23/05	8/30/05	2.59	ND	ND	ND	ND	2.586		ND D	
Bether-2-7-10	7-10	8/23/05	8/30/05	0.66	ND	ND	ND	ND	0.656		S	\dashv
Betnel-3-0-1	<u>-</u>	9/8/05	9/9/05	3.82	ND ND	ND	ND	ND	3.815	- 1	8	
Betnel-3-0.5-3	0.5-3	8/23/05	8/30/05	61.83	ND	ND	ND	N	61.83	- 1	ND	-
Bethel-3-3-4.5"	3-4.5	8/23/05	8/30/05	ł	ND	ND	ND N	ND	1	- 1	S	
Bethel-3-8.5-10'	8.5-10	8/23/05	8/30/05	*	ND	ND	ND	ND	,		S	+
Bethel-4-0-1	0 1	9/8/05	9/9/05	1.85	ND	ND	ND	ND	1.846		8	
Bethel-4-0.25-3'	0.25-3	8/23/05	8/30/05	619.04	ND	ND	ND	ND	619.035	- 1	B	
Beinel-4-3-/	3-7	8/23/05	8/30/05	₹	B	ND	ND	ND	1		ND	

NOTES:

ND = Not detected (below method detection limit)

~ = Sample Held (not analyzed)

Gray shaded values indicate that the Turnkey Acceptance Limit of 50 ppm for PCBs has been exceeded. Black shaded values indicate that the Upper Concentration Limit (UCL) of 100 ppm for PCBs has been exceeded.

Bethel AME Property RCRA 8 Metals

							RCRA 8 N	8 Metals	1				TCLP	
				Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Lead	Barium	Chromium
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/L)	(mg/L)	(mg/L)
			RCS-1	30	1,000	30	1,000	008	20.000	400	100	*	ł	7
	Toxicity Ch	aracteristic	Toxicity Characteristic (20 Times) Rule	100	2,000	20	100	100	4.000	20	100	1	*	ì
	,		Regulatory Limit	1	ì	~	-	-	t	*	ł	5	100	5
			UCL	300	10,000	800	10,000	6,000	600.000	10,000	2,000	~	2	~
Sample Identification	Depth	Date	Date Analyzed											
Bethel-1-1-3'	1-3	8/23/05	8/30/05	5	536	3	43	302	0.62	Š	P	0.39	,	,
Bethel-1-3-7'	3-7	8/23/05	8/30/05	17	1,850	11	104	1,220	1.15	R	ND ND	0.64	ŀ	<0.02
Bethel-1-7-8.5'	7-8.5	8/23/05	8/30/05	17	2,950	10	133	1,600	2.01	R	R	0.49	1.93	<0.02
Bethel-2-0.5-3'	0.5-3	8/23/05	8/30/05	14	972	7	82	1,370	1.04	ND	ND	1.73	1	ł
Bethel-2-3-7'	3-7	8/23/05	8/30/05	11	886	7	55	4,700	0.751	1.10	0.37	0.64	1	1
DUPLICATE 300 (Bethel 2-3-7')	3-7	8/23/05	8/30/05	8	585	5	56	863	0.743	ND	ND ND	ł	ì	ł
Bethel-2-3-7'MS	3-7	8/23/05	8/30/05	82	742	75	116	1,580	0.814	68.10	62.6	ı	ı	ł
Bethel-2-3-7'MSD	3-7	8/23/05	8/30/05		697	74	119	948	0.741	66.80	58.3	1	1	ł
Bethel-2-7-10'	7-10	8/23/05	8/30/05	7	947	3	270	345	0.14	0.74	ND	0.43	ł	0.03
Bethel-3-0.5-3'	0.5-3	8/23/05	8/30/05	13	1,010	- 6	195	645	0.931	S O	ND	0.46	,	<0.02
Bethel-3-3-4.5"	3-4.5	8/23/05	8/30/05	~	ı	ł		1	ł	ı	ì	ı	,	,
Bethel-3-8.5-10'	8.5-10	8/23/05	8/30/05	ì	~	ł	ı	ı	ı	ı	ì	ļ,	ı	1
Bethel-4-0.25-3'	0.25-3	8/23/05	8/30/05	33	4,690	43	296	1,920	1.930	g	R	1.51	4.47	<0.02
Bethel-4-3-7'	3-7	8/23/05	8/30/05	~	?	1				,	ı	1	,	,

NOTES:

ND - Not detected

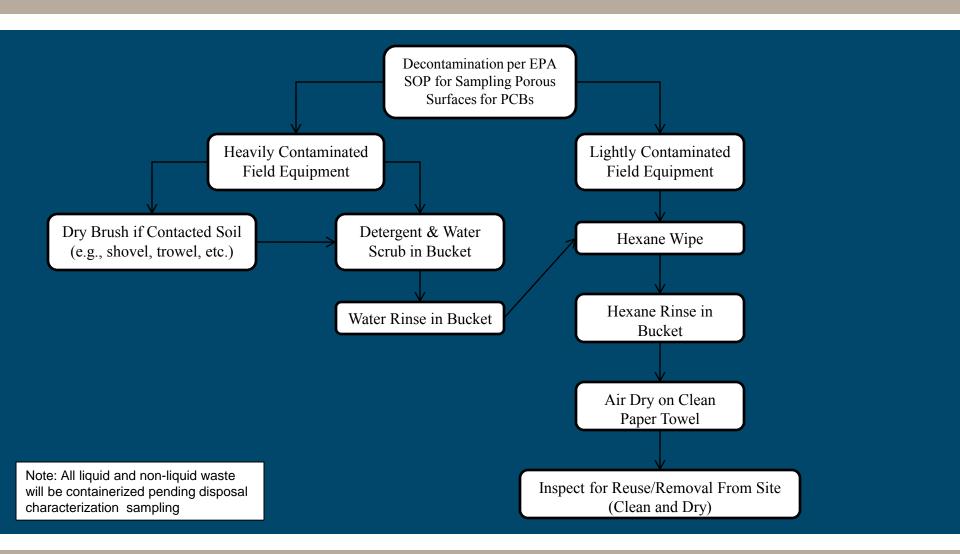
- = Constituent not analyzed (sample held)

Gray shading indicates concentration exceeding RCS-1 Soil Standard

Black shading indicates concentration exceeding Regulatory TCLP Limit or UCL.

Flow Chart Decontamination Procedures – Nemasket Street Lots





Flow Chart Waste Disposal Procedures – Nemasket Street Lots



