EA Engineering, Science, and Technology, Inc.

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28 September 2006

Mr. Joseph T. Martella, II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Waste Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

RE: RAWP Implementation Status Letter, Former Gorham Manufacturing Facility,
Parcel B, 333 Adelaide Avenue, Providence, Rhode Island
Case No. 2005-029
EA Project No. 61965.01

Dear Mr. Martella:

On behalf of the Providence Department of Public Property (City), EA Engineering, Science, and Technology, Inc. (EA) is providing this Remedial Action Work Plan (RAWP) Implementation Status Letter for the referenced site for your review and approval as necessary. As we discussed previously, several circumstances or site conditions regarding RAWP implementation have developed since the Rhode Island Department of Environmental Management (RIDEM) approved the RAWP. The purpose of this letter is to present these circumstances and site conditions and explain how the City will fulfill the RAWP in light of these issues.

1. INDOOR METHANE ALARM SYSTEM COMPONENTS

As you are aware, since the indoor action level for methane inside the school building is the same as that for the Save The Bay site (1% LEL or 500 ppm), EA had proposed to utilize the same vendor (Quest Controls, Inc. – Palmetto, FL) that supplied the indoor methane alarm system components for the Save The Bay site in Providence. Quest Controls has indicated that, since the time that they supplied the methane system for the Save The Bay site, they have changed suppliers for certain system components. The end result is that they can no longer accurately and reliably achieve 1% LEL with their methane sensors and their system would require a disclaimer indicating that false alarms may occur. Therefore, an alternate vendor (DOD Systems, Inc. – Chicago, IL) will be used to supply the indoor methane system components. Please note that all RAWP design features and RIDEM Order of Approval (OA) conditions will be met and that the change in vendor will only affect the components of the system. Information regarding the general operation of the system, communication between the methane sensors and the controller, and component specifications is provided in Attachment A. Please note that, although not shown in Attachment A, the system will include a battery backup feature and will be expandable to 16 analog inputs in the event that additional sensors are required in the future at the school building.

2. INDOOR AIR ACTION LEVELS FOR VOCS

In light of the fact that RIDEM does not have promulgated indoor air standards in their Remediation Regulations, indoor air action levels based upon the State of Connecticut's Proposed Revisions to Targeted Air Concentrations (CT TACs) were included in the OA for the school site. EA has contacted two independent analytical laboratories regarding future air sample analyses of volatile organic compounds (VOCs) via EPA Method TO-15. Both laboratories, Con-Test Analytical Laboratory (East Longmeadow, MA) and Alpha Analytical Labs (Westborough, MA), have indicated that some of the CT TACs are not achievable as reporting limits (RLs) via existing laboratory technologies. A copy of a letter from Con-Test Analytical Laboratory, included in Attachment B, documents correspondence with the CT Department of Public Health (CTDOH) and communications with the CT Department of Environmental Protection (CTDEP) supporting the position that some of these CT TACs would not be achievable. A copy of correspondence with Alpha Analytical Labs that includes a spreadsheet comparison of CT TACs with the reporting limits that they can achieve is also provided in Attachment B. As shown on the spreadsheet, even when implementing their Selective Ion Monitoring (SIM) procedures that effectively lower the Standard RLs by an order of magnitude, Alpha Analytical Laboratory would still be unable to meet the proposed, revised residential CT TAC for 5 VOC compounds (1,2-Dichloroethane, Ethylene dibromide, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, and Bromodichloromethane). Therefore, when evaluating OA compliance for these 5 compounds only, EA proposes to utilize the Alpha SIM RL shown in Attachment B as the indoor air action level in lieu of the proposed revised CT TACs.

3. ENGINEERED CAP IN VICINITY OF NORTH AND WEST PROPERTY BOUNDARIES OF PARCEL B

As addressed via the Fencing Barrier requirements included in the Consent Order for Parcel B & C, the City understands and agrees with the concern of RIDEM and the adjacent community with respect to restricting access to areas of the former Gorham site that are undergoing remedial activities.

With this in mind, in order to ensure that access to the YMCA parcel is restricted while development and remedy implementation is ongoing, the City will proactively install a fencing barrier along the Parcel B/C property boundary prior to school occupancy until such time that the engineered cap on the YMCA parcel is deemed complete and compliant by RIDEM. The fencing barrier will include 8-foot high chain link fencing fastened to steel posts set within concrete. The engineered cap on the school parcel will extend just beyond the fence line to enable the YMCA development to effectively tie into the Parcel B CAP without disrupting the cap, thereby creating as "seamless" a remedy across Parcel B and C (in this area) as practical.

EA had previously communicated to the Department that the Fencing Barrier installed in accordance with the Consent Order followed the Park Parcel boundary as close as practically possible, with the exception of the area near the northwest corner of Parcel B where the fencing was installed entirely on the Park Parcel side of the boundary due to impractical terrain. Similar to the discussion presented above relative to the YMCA development, the area of the Park Parcel

located north of Parcel B will not be fully remedied by the time the school is expected to open. Some of this area is located between the Parcel B boundary and the existing Fencing Barrier. Therefore, consistent with the general concept of restricting access to areas undergoing remedial activities, the City intends to install an additional fencing barrier prior to school occupancy and similar to that described above running generally east-west on Parcel B parallel to the northern Parcel B property line. The new fence will be installed at a location on the school parcel prior to the point where the topography slopes downward towards the Parcel B/Park Parcel boundary. The engineered cap on the school parcel will extend beyond the new proposed fence line all the way up to the Parcel B boundary in these areas. Installing a new fence in this location will facilitate improved access to the former slag area via Parcel A without adversely affecting the school development project, and will enable the future Park Parcel remedy, when implemented, to effectively tie into the Parcel B CAP without disrupting the school site cap, thereby creating as "seamless" a remedy across Parcel B and the Park Parcel (in this area) as practical.

4.0 ENGINEERED CAP IN HISTORICAL FILL AREAS TO BE PAVED

As stated in the RAWP and OA, the CAP in areas known or suspected to be subject to the Solid Waste Regulations, and under the jurisdiction of the Solid Waste Program, shall consist of a minimum of 2-feet of clean soil. The assumed general area that falls under this requirement is the area presented as the historical fill area on the figure provided in Attachment C.

5.0 CONCLUSION

On behalf of the City, and in an effort to proactively address any potential concerns, EA has previously discussed these issues with the Department. The City believes that the implementation intentions outlined in this letter either maintain or strengthen the approved remedy for Parcel B, facilitate future remedies on adjacent parcels, and do not compromise the written requirements or the spirit of the OA. Therefore, the City respectfully requests your prompt review and response to this letter. In the event that the Department has any questions or believes that a comment letter is warranted, the City requests a meeting with the Department for an opportunity to answer any questions and resolve any issues you may have in order to avoid implementation problems associated with the onset of cold/inclement weather and construction schedules.

Thank you for your timely attention. If you have any questions or require additional information, please do not hesitate to contact either of the undersigned at 401-736-3440.

Sincerely,

EA ENGINEERING, SCIENCE,
AND TECHNOLOGY, INC.

Peter M. Grivers, P.E., LSP
Project Manager

Timothy C. Regan, P.E., M.B.A.
Client Manager/Senior Engineer

PMG/tr

Attachments

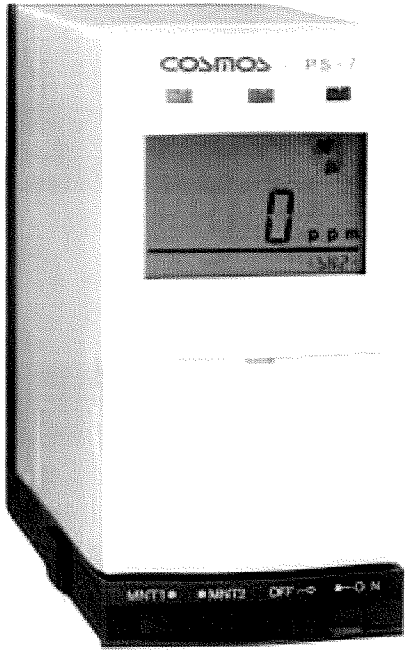
cc: A. Sepe, Providence Department of Public Property
B. Wagner, Esq., RIDEM Legal Services
K. Owens, RIDEM Office of Waste Management
L. Hellested, RIDEM Office of Waste Management
T. Gray, RIDEM/AW&C
C. Walusiak, RIDEM Office of Waste Management
S. Rapport, City of Providence Law Department
J. Ryan, Partridge, Snow, & Hahn
J. Boehnert, Partridge, Snow, & Hahn
T. Deller, Providence Redevelopment Agency
J. Simmons, City of Providence
D. Heislein, MacTec
J. Hartley, GZA
S. Fischbach, RI Legal Services
J. Pichardo, Senator - District 2
G. Simpson, Textron
Former Gorham Site, Parcel B – Knight Memorial Library Repository

Attachment A

Methane Monitoring Information

DOD Technologies, Inc.
Innovative Life Safety Systems & Services

8 analog inputs - Eight onboard SPDT relays - Relay output modules - Scrolling LCD display - LED alarm indication - Audible alarm with silence button - Completely field programmable - Rugged steel enclosure – Requires 120VAC Power



PS-7 Provides a digital display of concentration. Unit can sample up to 75 ft away. Monitors flow and sensor cell. PS-7 is powered by PDC Controller. Methane detection range is 0-1000ppm.

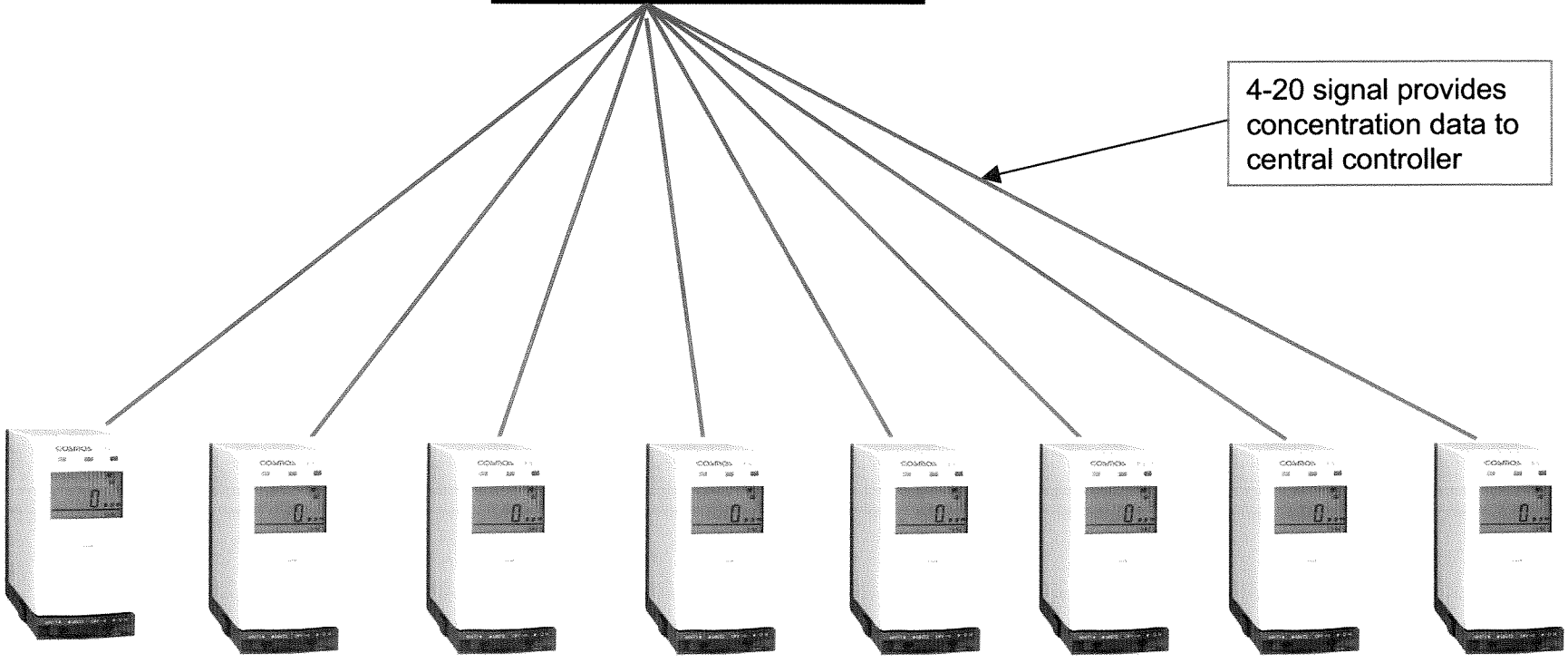
DOD Technologies, Inc.
Innovative Life Safety Systems & Services

PDC Controller can connect to up to 8 PS-7 units. PDC provides concentration at each point, programmable alarm levels, audible alarm & strobe light (not shown). Provided with 8 programmable relays.

Auto Dialer

Auto Dialer will dial a pager or phone when 500ppm alarm level is reached

4-20 signal provides concentration data to central controller



PS-7 CH4 0-1000ppm gas detection units installed through out school

Appendix B

Laboratory Documentation Regarding TO-15 Air Sample Reporting Limits vs. Proposed, Revised CT TACs for Indoor Air

con-test®
ANALYTICAL LABORATORY

39 Spruce Street
East Longmeadow, MA 01028
413-525-2332 www.contestlabs.com

September 21, 2006

CTDEP Volatilization Criteria
Target Indoor Air Concentrations

Valued Clients:

This letter is in response to the State of Connecticut Department of Environmental Protection (CTDEP) Volatilization Criteria associated with the Remediation Standard Regulations. In the regulation several of the TAC (target indoor air concentrations) numbers are extremely low. Con-Test Analytical Laboratory has twenty years of air analysis experience and nine years of summa can analysis experience. We have taken every reasonable approach to achieve these numbers but several of them remain beyond the scope of the analysis (Method TO-15).

Con-Test recently has had several email correspondence with the Connecticut Department of Public Health. In turn, they had discussions with the CTDEP who set the indoor air limits. In conclusion it was stated "The TAC were set based on risk assessment, all involved realized that some on the limits would not be achievable".

Con-test Analytical Laboratory has been **AIHA** certified over nineteen years. Along with VOC's in ambient air we have the capability to analyze PAH's and PCB's by PUF, VOC's by **Summa** canister, thermal or chemical desorption as well as metals. Our state of the art facility has the capability to analyze water and soil as well. We maintain National certification (**NELAC**) and state certification in New England and New York.

Please contact us if there are specific compounds with limits that need to be achieved to discuss alternative analytical procedures. Feel free to call me at (413) 525-2332 ext. 41.

Sincerely,

Tod Kopyscinski
Air Laboratory Manager

Grivers, Peter

From: Glen Breland [gbreland@charter.net]
Sent: Saturday, August 12, 2006 7:00 AM
To: Grivers, Peter
Subject: Re: Previous email request

EA_CTRSR_Limits air.xls (19 KB...

Peter,
Attached is an Excel table comparing the CT criteria vs. Alpha's standard reporting limits and against our SIM limits. There are five compounds that we don't hit using either regular or SIM approach. One of those is very close.

This would be the best we could do at this time. Please review the list. I'll call you next week to discuss what needs to be done next.

Thanks,

Glen

----- Original Message -----
From: "Grivers, Peter" <pgrivers@eaest.com>
To: "Glen Breland" <gbreland@alphalab.com>
Sent: Tuesday, August 08, 2006 3:53 PM
Subject: RE: Previous email request

No problem - we will probably need to collect the first batch of the samples in November or December. Then quarterly thereafter for a year. Probably 5-6 at a time for a total of around 40. Thanks, and I'll sit tight until I get your response.

-----Original Message-----
From: Glen Breland [mailto:gbreland@alphalab.com]
Sent: Tuesday, August 08, 2006 3:55 PM
To: Grivers, Peter
Subject: Re: Previous email request

Grivers, Peter wrote:
> Hi Glen:
>
> Shortly after you held a presentation here at EA in late may, I sent
> over an email (in early June, I think) asking you to look into some CT

> proposed revised targeted indoor air concentrations and Alpha's
> ability to meet the concentrations when analyzing air samples via
> TO-15. In the past, we have had other labs report some of the
> sampling results as "ND" but the MDLs were greater than the proposed
> revised CT concentrations. The other lab has stated that they can not

> achieve the low MDLs and indicate that CT DEP officials are on record
> as stating that they recognize that some of the concentrations are
> very low and not achievable through today's technologies. Maybe
> that's why these proposed revisions are not final?!
>
> You were going to look into Alpha's ability to meet all of these
> concentrations via TO-15 and, if not, provide some written technical
> explanation regarding why - for example, "the concentrations are too
> low to achieve based upon currently available technology". I

> inadvertently deleted the email I sent. Hopefully you can dig it up.
>
> Please reply at your earliest convenience. I will need to have a
> fairly large amount of air samples analyzed over the next year and a
> half and RIDEM wants me to meet these CT proposed revised
> concentrations. I'll have to discuss the inability of achieving them
> if indeed that turns out to be the case.
>
> Sincerely,
> **
> *Peter M. Grivers, P.E., LSP*
> /Project Manager/
> EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
> 2350 Post Road
> Warwick, RI 02886
>
> 401-736-3440 (office)
> 401-736-3423 (fax)
> 401-935-5080 (cell)
> pgrivers@eaest.com <mailto:pgrivers@eaest.com> (email)
>
>
Peter,
I will get back to you by the end of the week regarding your request. Sorry for the delay in responding, I had it in my head your project wasn't going to start until next spring. I'll talk to you soon.

Thanks,

Glen

Compound	CAS #	Residential TAC, ug/m3	Industrial TAC, ug/m3	Alpha Standard RL	Alpha SIM RL
Acetone	67641	180	500	4.75	NA
Acrylonitrile	107131	NA	NA	1.08	NA
Benzene	71432	3.3	3.3	1.60	0.06
Bromoform	75252	0.55	7.3	5.16	0.21
2-Butanone (MEK)	78933	500	500	1.47	NA
Carbon tetrachloride	56235	0.5	0.54	3.14	0.13
Chlorobenzene	108907	37	200	2.30	0.09
Chloroform	67663	0.5	0.5	2.44	0.10
Dibromochloromethane	124481	NA	NA	4.26	0.17
1,2-Dichlorobenzene	95501	73	410	3.00	0.30
1,3-Dichlorobenzene	541731	73	410	3.00	0.30
1,4-Dichlorobenzene	106467	24	24	3.00	0.30
1,1-Dichloroethane	75343	77	430	2.02	0.08
1,2-Dichloroethane	107062	0.07	0.31	2.02	0.08
1,1-Dichloroethylene	75354	10	20	1.98	0.08
1,2-Dichloropropane	78875	0.13	0.42	2.31	0.09
1,3-Dichloropropene	542756	0.21	2.9	2.27	0.09
Ethyl benzene	100414	53	290	2.27	0.09
Ethylene dibromide (EDB)	106934	0.0028	0.038	3.84	0.15
Methyl-tert-butyl-ether	1634044	160	190	1.80	0.07
Methyl isobutyl ketone	108101	37	200	2.05	NA
Methylene chloride	75092	3	17	3.47	0.17
Styrene	100425	52	290	2.13	0.09
1,1,1,2-Tetrachloroethane	630206	0.082	1.1	3.43	0.14
1,1,2,2-Tetrachloroethane	79345	0.011	0.14	3.43	0.14
Tetrachloroethylene	127184	5	5	3.39	0.14
Toluene	108883	210	500	1.88	0.08
1,1,1-trichloroethane	71556	500	500	2.73	0.11
1,1,2-Trichloroethane	79005	2.2	12	2.73	0.11
Trichloroethylene	79016	1	1	2.68	0.11
Vinyl chloride	75014	0.14	1.9	1.28	0.05
Xylenes	1330207	220	500	6.51	0.26
New Criteria					
Trichlorofluoromethane	75694	370	500	2.81	0.11
Chloroethane	75003	500	500	1.32	0.05
Chloromethane	74873	14	80	1.03	0.04
Dichlorodiflouromethane	75718	91	500	4.94	0.10
Isopropylbenzene (cumene)	98828	120	120	2.46	NA
cis-1,2-dichloroethene	156592	18	100	1.98	0.08
trans-1,2-dichloroethene	156605	37	200	1.98	0.08
Bromodichloromethane	75274	0.034	0.46	3.35	0.13
N-butylbenzene	104518	73	410	2.74	NA
Sec-butylbenzene	135988	73	410	2.74	NA
1,2,4-trimethylbenzene	95636	9.3	52	2.46	0.10
1,3,5-trimethylbenzene	108678	9.3	52	2.46	0.10
4-isopropyltoluene	99876	67	370	2.74	NA

Appendix C

Figure Illustrating Historical Fill Area

EA	FORMER GORHAM MANUFACTURING SITE, PARCEL B 333 ADELAIDE AVENUE PROVIDENCE, RHODE ISLAND	FIGURE 2 SITE PLAN AND AREAS OF CONCERN

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
TR	DC	DC	JP	AS SHOWN	MARCH 2005	6196501	I:\RI\FIG2- AERIAL 333 ADELAIDE_PROV.MXD