BOARD OF REGISTRATION OF
HAZARDOUS WASTE SITE CLEANUP PROFESSIONALS

SUMMARY OF FINAL DISCIPLINARY ACTIONS

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The LSP Board investigates complaints that LSPs have violated the Board's Rules of Professional Conduct at 309 CMR 4.00. If the LSP's actions are found to have violated these Rules, the Board may take disciplinary action against the LSP. Set forth below are summaries of the disciplinary actions the Board has taken as of the date noted above. In cases where the Board has reviewed a full investigative report and found that sufficient facts exist to warrant discipline against the LSP, the summary includes both the facts and circumstances, as found by the Board, and the disciplinary action taken. In cases where the Board has entered into an Administrative Consent Order with the LSP prior to review of a full investigative report, the summary describes the allegations made in the complaint(s) that gave rise to the investigation and the terms of the agreement between the Board and the LSP. These summaries do not include disciplinary actions that resulted in the issuance of a Private Censure. They also do not include cases that resulted in dismissal of the complaint after a Board investigation. Except when a disciplinary complaint results in the issuance of a Private Censure, all of the Board's files concerning closed disciplinary cases are public record.

- LSP Board Complaint Number 24C-02 (License Suspension)
- LSP Board Complaint Number 18C-02 (License Suspension)
- LSP Board Complaint Number 18C-01 (Voluntary Surrender of License)
- LSP Board Complaint Number 11C-05 (Voluntary Surrender of License)
- LSP Board Complaint Number 11C-04 (License Suspension)
- LSP Board Complaint Number 10C-01 (Prohibition on Reapplication)
- LSP Board Complaint Number 08C-06 (License Suspension)
- LSP Board Complaint Number 08C-04 (License Suspension)
- LSP Board Complaint Number 08C-03 (Voluntary Surrender of License)
- LSP Board Complaint Number 07C-08 (License Suspension)
- LSP Board Complaint Number 07C-01 (Public Censure)
- LSP Board Complaint Number 06C-08 (License Suspension)
- LSP Board Complaint Number 06C-03 (License Suspension)
- LSP Board Complaint Number 06C-01 (License Suspension)
- LSP Board Complaint Number 05C-07 (License Suspension)
- LSP Board Complaint Number 05C-06 (License Suspension)
- LSP Board Complaint Number 05C-01 (Public Censure)
- LSP Board Complaint Number 04C-03 (Voluntary Surrender)
- LSP Board Complaint Number 04C-02(b) (Prohibition on Reapplication)
- LSP Board Complaint Number 03C-06 (License Suspension)

- LSP Board Complaint Number 03C-05 (Prohibition on Reapplication)
- LSP Board Complaint Number 03C-01 (Voluntary Surrender of License)
- LSP Board Complaint Number 02C-08 (Public Censure
- LSP Board Complaint Number 02C-07 (Prohibition on Reapplication)
- LSP Board Complaint Number 02C-04 and 07C-07 (License Suspension)
- LSP Board Complaint Number 02C-03 and 03C-02 (License Suspension)
- LSP Board Complaint Number 02C-02 (Voluntary Surrender of License)
- LSP Board Complaint Number 02C-01 (Public Censure)
- LSP Board Complaint Number 01C-10 (Prohibition on Reapplication)
- LSP Board Complaint Number 01C-06 (Public Censure)
- LSP Board Complaint Number 01C-02 (License Suspension)
- LSP Board Complaint Number 01C-01 (License Revocation)
- LSP Board Complaint Numbers 00C-18 and 07C-04 (License Suspension)
- LSP Board Complaint Numbers 00C-12 and 00C-13 (License Revocation)
- LSP Board Complaint Number 00C-11 (Voluntary Surrender of License)
- LSP Board Complaint Number 00C-09 (License Revocation)
- LSP Board Complaint Number 00C-05 and 01C-04 (Voluntary Surrender of License)
- LSP Board Complaint Number 00C-004 (License Suspension)
- LSP Board Complaint Number 00C-02 (Public Censure)
- LSP Board Complaint Number 00C-01 (License Revocation)
- LSP Board Complaint Number 99C-20 (License Revocation)
- LSP Board Complaint Numbers 99C-17 and 99C-19 and 00C-07 (License Suspension)
- LSP Board Complaint Numbers 99C-13, 02C-6 and 02C-10 (Voluntary Surrender of License)
- LSP Board Complaint Numbers 99C-11 and 00C-14 (License Revocation)
- LSP Board Complaint Number 99C-09 (License Suspension)
- LSP Board Complaint Number 99C-08 (Public Censure)
- LSP Board Complaint Number 99C-04 (Public Censure)
- LSP Board Complaint Number 99C-03 (Five Year License Prohibition)
- LSP Board Complaint Numbers 98C-01 and 98C-03 (Public Censure)
- LSP Board Complaint Number 97C-10 (Public Censure)
- LSP Board Complaint Number 97C-09 (Public Censure)
- LSP Board Complaint Number 97C-08 (Public Censure)
- LSP Board Complaint Numbers 95C-03 and 97C-07 (License Withdrawn)
- LSP Board Complaint Number 96C-06 (License Withdrawn)
- LSP Board Complaint Number 96C-03 (Revocation of License)

- LSP Board Complaint Number 96C-02 (Public Censure)

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LSP Board Complaint 24C-02

LICENSE SUSPENSION

On February 12, 2026, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary investigation. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her license for a period of eighteen months.

In December 2024, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board against the LSP alleging a number of violations of the Massachusetts Contingency Plan ("MCP") including, among other things, that the LSP failed to recognize an Imminent Hazard in a residence and made false and misleading statements in several waste site cleanup activity opinions.

The LSP is also required to complete a specific continuing education course prior to the end of the suspension period. The Board and the LSP entered into the ACO before the Board had completed an investigation of the disciplinary complaint filed against the LSP.

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LSP Board Complaint 18C-02

LICENSE SUSPENSION

On January 27, 2026, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary investigation. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her license for a period of ninety days.

In July 2018, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board against the LSP alleging a number of violations of the Massachusetts Contingency Plan ("MCP") including, among other things, failing to prevent, mitigate or eliminate a Critical Exposure Pathway in an occupied residence and failing to report an Imminent Hazard in a residence.

The LSP is also required to complete certain continuing education courses. If the courses are not completed within certain timelines set out in the ACO, the LSP's license will be suspended for an additional thirty (30) days. The Board and the LSP entered into the ACO before the Board had completed an investigation of the disciplinary complaint filed against the LSP.

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LSP BOARD COMPLAINT 18C-01
VOLUNTARY SURRENDER OF LICENSE

On March 6, 2025, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary investigation. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to surrender his/her LSP license voluntarily and not to reapply for a minimum of four years. The ACO also requires the LSP to take certain continuing education courses. The Board and the LSP entered into the ACO before the Board had completed a disciplinary investigation.

In January, 2018, MassDEP submitted a complaint with the Board regarding the LSP. The complaint concerned work the LSP submitted during 2016-2018 and alleged that work exhibited a pattern of poor performance. Among the specific issues raised in the complaint were: failing to document hydrogeologic conditions at sites; failing to follow regulatory requirements in performing risk characterizations; and failing to assess indoor air for a possible imminent hazard. The Board was investigating the allegations when the LSP and the Board entered into the ACO.

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LSP Board Complaint 11C-05
VOLUNTARY SURRENDER OF LICENSE

On February 28, 2012, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary investigation. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to surrender his/her LSP license voluntarily and never to reapply for an LSP license. The Board and the LSP entered into the ACO before the Board had completed a disciplinary investigation.

In August 2011, the LSP was convicted by the state of Maine of stealing more than $10,000 from Maine bottle manufacturers, distributors, and collection agents, by obtaining refunds and handling fees for cans and bottles that the LSP knew were coming from outside the state. The Board's regulations state that it shall constitute misconduct for an LSP to engage in conduct that results in a conviction for certain crimes, including those involving fraud or deceit. The Board was investigating the conviction when the LSP and the Board entered into the ACO.

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LSP Board Complaint 11C-04
LICENSE SUSPENSION

On November 28, 2018, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary investigation. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her license for a period of twelve months.

In December 2011, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board against the LSP alleging a number of violations of the Massachusetts Contingency Plan ("MCP") including, among other

things, failing to apply remedial additives in a manner consistent with the MCP, and to adhere to sampling and analytical requirements before and after remedial additives were used to treat soil and groundwater.

The LSP is also required to complete certain continuing education courses. If the courses are not completed within certain timelines set out in the ACO, the LSP's license will be suspended for an additional ninety (90) days. The Board and the LSP entered into the ACO before the Board had completed an investigation of the disciplinary complaint filed against the LSP.

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LSP Board Complaint 10C-01

PROHIBITION ON REAPPLICATION

On January 23, 2019, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the LSP, who license had expired in January 2011, did not admit to any violation of law or regulation but agreed not to reapply for an LSP license for five years.

In March, 2010, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board alleging filed a complaint with the Board 6against the LSP alleging a number of violations of the Massachusetts Contingency Plan ("MCP") including, among other things, failing to assess the vertical and horizontal extent of contamination, and failing to collect adequate data and information to support a finding of no significant risk.

In January 2011, while the Complaint was still under investigation, the LSP chose not to renew his/her LSP license when it expired. The Board and the LSP entered into the ACO before the Board had completed an investigation of the pending disciplinary complaint.

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LSP Board Complaint No. 08C-06

LICENSE SUSPENSION

On August 1, 2014, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the license of an LSP for a period of eight months for violations of the Board's Rules of Professional Conduct. An adjudicatory hearing was held in April 2013, and the Presiding Officer issued a Recommended Decision, after which the LSP entered into an ACO in which s/he did not admit to any violations of any law or regulation but agreed to accept an eight-month suspension of his/her license. The complaint in this matter was filed by the Massachusetts Department of Environmental Protection ("MassDEP") Environmental Strike Force.

Summary of Findings

Based on the preliminary investigation, the Board determined in November 2011 that the LSP had violated the following Board Rules of Professional Conduct, as follows:

I. The Respondent failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02(1) by failing to act with reasonable care and diligence or apply the knowledge and skill ordinarily exercised by LSPs, by conduct that included, without limitation:

a. After receiving soil gas reading of 2,400,000 parts per billion of tetrachloroethylene ("PCE"), not asking for detail about the level of risk after a risk assessor advised in 2003 that risks calculated from the soil gas data exceeded MassDEP limits for No Significant Risk;

b. Not testing indoor air or initiating an Imminent Hazard Evaluation in 2003;

c. Submitting a Phase I Report that failed to mention the potential Imminent Hazard, stated that an Immediate ResponseAction ("IRA") was not required, and indoor air would be tested "as appropriate" rather than immediately;

d. Submitting a Numerical Ranking System ("NRS") score sheet that scored indoor air 100 points as a potential exposure pathway rather than 200 points as a likely exposure pathway and, asa result, categorizing the site as Tier 1B rather than Tier 1A;

e. Not adequately reviewing the risk assessor's February 2004 Indoor Air Evaluation Report or questioning its assumption that part-time workers were a more likely risk scenario than full time employees; and

f. Not recognizing that an Excess Lifetime Cancer Risk ("ELCR") reported in the February 2004 Indoor Air Evaluation was six times the threshold for an Imminent Hazard.

g. The conduct listed above also violated the Board's Rule of Professional Conduct at 309 CMR 4.02(3) by failing to rely only in part upon the advice of professionals whom the LSP has determined are qualified.

h. The conduct listed above also violated the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(a) by failing to exercise independent professional judgment.

i. The Respondent violated the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

Background of Case

The site was about 0.21 acres with a one-story wood frame building with a basement. A dry cleaning business occupied the building from about 1981 to 1993. A video store with both full time and part time workers occupied the building when the Respondent began working on the site in January 2003. The site was within a Zone II of a public drinking water supply well, thus groundwater was classified as GW-1 pursuant to the MCP.

In 1993, MassDEP was notified that the drycleaning business routinely dumped tetrachloroethylene ("PCE") on the ground behind the building. In May 2002, the owner

of the gas station that abutted the site submitted to MassDEP a Downgradient Property Status report stating that PCE-contaminated groundwater had migrated from the site to the gas station. MassDEP issued a Notice of Responsibility to the owner of the video store site.

In January 2003, PCE was detected in two wells at concentrations of 17,500 micrograms per liter ("µg/L") and 696 µg/L, above the Method 1 cleanup standard of 5 µg/L for GW-1 groundwater. In April 2003, PCE concentrations again exceeded GW-1, and in August 2003, concentrations of 5,630 and 5,900 µg/L were detected .

Soil gas was sampled in September 2003, and PCE was detected at concentrations of 2,400,000 and 159,000 micrograms per cubic meter ("µg/m^3") within three to five feet of the rear of the building. The Respondent sent the soil gas results to a professional risk assessor and verbally requested an evaluation. The risk assessor verbally advised the Respondent that the cancer risk calculated from the soil gas data exceeded MassDEP risk limits for No Significant Risk. The Respondent did not ask the risk assessor for the numerical ELCR risk value s/he had calculated or any other information about the level of risk.

The January 2004 Phase I Report signed by the LSP included the groundwater and soil gas test results, but stated that site conditions did not require Immediate Response Action and indoor air would be sampled in Phase II "as appropriate." An NRS Scoresheet scored indoor air 100 points as a potential exposure pathway rather than 200 points as a likely migration pathway.

After reviewing the Phase I Report, MassDEP required indoor air testing and an Imminent Hazard Evaluation. PCE was detected at 714 µg/m^3 on the first floor and 4,840 µg/m^3 in the basement.

The Respondent asked the same risk assessor who had evaluated the soil gas results to conduct an Imminent Hazard Evaluation using the indoor air results. The risk assessor's written report stated that the worst-case exposure scenario was a full-time worker who worked for five years, but, given the nature of the video store business, the reasonable, more-likely exposure scenario was a part-time worker for two years. It reported an ELCR for the full-time worker of 6×10^{-5}, and stated this was less than the MCP standard for reporting an Imminent Hazard, which it asserted was 1×10^{-4}.

The LSP sent MassDEP the risk assessor's report and stated that the risk assessor concluded that an Imminent Hazard did not exist at the property. The letter proposed to collect seasonal indoor air samples and re-evaluate the numerical ranking.

MassDEP informed the Respondent that the correct MassDEP limit for reporting an Imminent Hazard of cancer was 1×10^{-5}, and the ELCR of 6×10^{-5} exceeded the correct limit, thus an Imminent Hazard existed for both full-time and part-time employees. The Respondent proposed Immediate Response Actions, and the building was evacuated.

The Recommended Decision

On January 17, 2014, the Presiding Officer issued a Recommended Decision that

found that the Respondent violated the Board's Rules of Professional Conduct 309 CMR 4.02(1), 4.02(3), and 4.03(3)(a)-(b) as alleged by the Board. The Board was preparing to review the evidence and issue its Final Findings and Rulings when it entered into the Consent Order with the Respondent.

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LSP Board Complaint 08C-04
LICENSE SUSPENSION

On February 1, 2009, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her LSP license for a period of six months. The Board and the LSP entered into the ACO before the Board had completed an investigation of a disciplinary complaint filed against the LSP.

In April 2008, a private party filed a complaint with the Board alleging that the LSP had failed to follow state regulations while working in 2007 on a contaminated site. Specifically, the complaint alleged that the LSP excavated contaminated soil and conducted dewatering without previously filing a plan of this work with the Massachusetts Department of Environmental Protection ("MassDEP") The Complaint also alleged that the LSP failed to obtain a federal permit for discharge of treated groundwater to a storm drain that discharged to a river. The Board was investigating these allegations when the LSP and the Board entered into the ACO.

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LSP BOARD COMPLAINT 08C-03

VOLUNTARY SURRENDER OF LICENSE

On October 30, 2024, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary case. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed to surrender his/her LSP license voluntarily and to not reapply for an LSP license for one year. An adjudicatory hearing was held in 2017, after which the Presiding Officer issued a Recommended Decision. Before the Board issued a Final Decision, the Board and the LSP reached agreement on the ACO. The complaint in this matter was filed by the Massachusetts Department of Environmental Protection ("MassDEP") Environmental Strike Force.

Summary of Findings

The Recommended Decision issued by the Presiding Officer as a result of the adjudicatory appeal determined the Board had proven the following violations:

I. The LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02 (1) by failing to act with reasonable care and diligence in regard to the two disposal sites outlined below. Examples of conduct that violated this regulation included the following:
   i. Submitting an IRA Completion that was based on operation of an active remedial system to mitigate an Imminent Hazard condition. The MCP (310 CMR 40.0427(1)(b)) does not allow for the closure of an IRA based upon reliance on an active system to mitigate an IH condition.
   ii. Not including PCE as a carcinogen (incorrectly believing PCE was not

carcinogenic) in completing a Method 3 Imminent Hazard Evaluation leading to a false assertion that an Imminent Hazard Condition did not exist.

iii. Not submitting indoor air data with monthly monitoring reports as required, waiting until the submission of the IRA Completion to submit the data.

iv. Inappropriately eliminating soil gas as a migration pathway to indoor air when soil gas data was not collected beneath or immediately adjacent to a structure.

v. Submitting an RAO without identifying the extent of groundwater contamination beyond the property boundary or the effect of that contamination (>GW-2) on the indoor air of the adjacent downgradient structure.

II. The LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.000.

Background of Case

Site A

Site A was a 7,528 square foot commercial property improved with a 4,270 square-foot building constructed in 1967. The building was divided into two units. The western unit was occupied by a hair salon and the eastern unit was a seafood market. Historically, the building had also housed office space and a bank. A prior building, destroyed by fire, existed between 1951 and 1961 and housed office space and an ice cream store. Prior to 1951, the site was used as a residence and from the 1920s to 1930s as a plumber's office.

In January 1997, MassDEP was notified that PCE in groundwater exceeded the GW-2 Reportable Concentrations. According to a 1998 Phase I and Tier Classification Submittal, signed and stamped by the LSP**,** the source of the contamination was attributed to historical dry cleaning operations at the adjacent property.

The site went into default status until new owners hired the LSP to perform response actions at the site. As a result of indoor air sampling conducted on behalf of the new owner, an Imminent Hazard (IH) was identified and notification was made to MassDEP on September 5, 2006. Concentrations of PCE (23 $\mu g/m^3$) and trichloroethylene (TCE) (16.2 $\mu g/m^3$) were detected in indoor air. As an immediate response to the indoor air issue, the facility doors were left open to vent the structure. By September 27, 2006, the MassDEP provided oral approval to begin installation of a sub-slab venting system on the condition that the LSP submit a written IRA Plan detailing the proposed installation. The IRA Plan, received on November 13, 2006, stated that two follow-up groundwater sampling events revealed PCE concentrations of 8,500 µg/L and 26,000 µg/L. The Method 1 GW-2 Standard at that time was 50 µg/L. The LSP followed up by collecting soil gas samples beneath the building slab. The results revealed several volatile organic compounds (VOCs) including PCE (up to 7,600 $\mu g/m^3$), TCE (up to 573 $\mu g/m^3$) and cis-1,2-dichloroethene (up to 312 $\mu g/m^3$). The LSP considered this confirmation that the source of the VOCs in indoor air was the result of sub-slab migration.

An IH Evaluation, dated September 18, 2006 and included with the IRA Plan, determined an IH existed for full time workers. However, the IH Evaluation stated that this condition was the result of TCE in indoor air and not PCE. The IH evaluation stated: "PCE is not listed as a potential carcinogen nor is there data available for carcinogenic effects in

available literature." The IH Evaluation was signed by the LSP and the project manager.

The IRA Plan proposed mitigating the IH condition via the installation of duel point (one in each unit), single blower, active sub-slab soil gas extraction removal system. The efficacy of the system was to be determined by sampling indoor air. In mid-January 2007, the system was assessed via indoor air testing, revealing TCE (18.1 $\mu g/m^3$) and PCE (60.1 $\mu g/m^3$). This followed the installer's earlier (January 5, 2007) sub-slab pressure measurements which revealed atmospheric pressure (no vacuum) at two points beneath the slab under the seafood market. On January 22, 2007, prior to the availability of the indoor air laboratory reports (dated January 24, 2007), MassDEP staff visited the site and noted a large crack at the junction of the floor and wall in the seafood market. MassDEP requested the crack be fixed and smoke tested. There was no indication in the MassDEP Release Log Form Attachment that the MassDEP inspector knew of the contractor's sub-slab pressure result.

On January 26, 2007, the MassDEP received an IRA Status Report dated January 12, 2007, which did not include the indoor air data. The report did include the January 5, 2007, monitoring report by the third-party sub-slab system installer revealing the atmospheric pressure results at two locations beneath the slab in the seafood market. The IRA Status Report stated that, based on the results of the vacuum testing, it was determined that "the system was operating as expected and it was effective in creating pressure in boreholes situated throughout the units of the Site."

On September 11, 2007, the LSP submitted an IRA Completion submittal. The document stated that, based on the January sub-slab pressure results, it was determined that the system was operating as expected and was effective at removing sub-slab vapors. The January 2007 indoor air data was included in this submittal and is the first documented conveyance of the results to MassDEP. There is no record of submittal of any monthly Remedial Monitoring Reports (RMRs) relative to the active operation of this system

On December 11, 2007, MassDEP issued a Notice of Audit Findings/Notice of Noncompliance (NOAF/NON) resulting in the invalidation of the IRA Completion. Among the issues raised in the NON were:

- The November 2006 IH Evaluation was not based on the correct MassDEP chemical toxicity information. The Reference Dose and Slope Factor for TCE were not the latest MassDEP values at that time. Also, the IH Evaluation did not treat PCE as a carcinogen. The IH Evaluation stated on page 4: "PCE is not listed as a potential carcinogen nor is there data available for carcinogenic effects in available literature."
- The September 2007 IH Evaluation also relied on the same computer program as was used for the November 2006 IH Evaluation. Therefore, MassDEP stated that the risk posed to human health was incorrect as the chemical toxicity information did not consider MassDEP derived values.
- While the September 2007 IRA Completion stated that an evaluation of the sub-slab depressurization systems in January 2007 indicated the systems were "operating as expected and it was (sic) effective at removing sub-slab vapors," a January 5, 2007 letter prepared by the system installer that was attached to the IRA Completion Statement stated that two of the three pressure monitoring points from one unit had no vacuum.
- The indoor air sampling data presented in the IRA Completion did not indicate any apparent trend in PCE or TCE concentrations in indoor air over the same time period in either the hair salon or fish market spaces. The MassDEP stated that that the results did not demonstrate that the Response Actions taken at the site demonstrated that the IH had been controlled. An IRA cannot be considered complete until any Imminent Hazard has been eliminated or controlled.

Site B

The Site, occupied by medical offices since approximately 1985, was also a registry of motor vehicles and car dealership from the late 1970s to 1985, an auto rental facility as of approximately 1970, and an ice cream and dairy factory from approximately 1928 to

1966. Sanborn maps dating from 1936, 1950 and 1973 depict a steel shed labeled as “auto repair and painting” and maps from 1936 and 1950 show a gasoline underground storage tank (UST) that was located underneath a portion of the on-site building. The property also housed a 500-gallon diesel UST.

In November 2002, an environmental consulting firm prepared a “Preliminary UST Investigation Report” that focused on the area around an existing fiberglass 500-gallon diesel UST used to service a diesel-powered generator located off the southeastern corner of the building. Fire department records indicate that in February 1992 personnel visually observed "a lot of diesel fuel on the gravel surrounding an emergency generator in the back of the building" resulting in the removal of five 55-gallon drums of gravel. Further, the tank had reportedly failed a tank tightness test performed in 1999, at which point the fill and vent lines were replaced. The report also stated that the tank had been recently tested (in 2002), and passed.

Four soil borings, three of which were completed as monitoring wells were advanced around the diesel UST as part of the investigation. Low concentrations of anthracene, phenanthrene, naphthalene, and 2-methylnaphthalene were detected in soil in one boring, located adjacent to the generator. This same boring also revealed other polycyclic aromatic hydrocarbons (PAHs) at concentrations above applicable Reportable Concentrations and/or Method 1 Standards, as shown in the table below. The only PAHs detected in the groundwater at this location were low levels of 2-methylnapthalene and naphthalene. A Release Notification Form (RNF) was submitted to MassDEP on March 10, 2003.

In July 2003, the LSP submitted a Release Abatement Measure (RAM) Plan proposing the removal of the UST and associated contaminated soil. On October 20, 2003, the LSP submitted a RAM Completion Statement in which s/he reported that the tank was in good condition with no perforations or corrosion and the pea stone surrounding the tank showed no visual or olfactory evidence of fuel oil. Field screening readings for soils were non-detect. Two sidewall post-excavation soil samples were collected for laboratory analysis, the results of which were non-detect for VPH/target analytes, but exceeded applicable standards for some PAHs. The LSP stated that the lab observed coal ash in the samples. As a result, s/he considered PAHs exempt from reporting and eliminated the diesel UST as a potential source. The closure report did not include any documentation from the laboratory regarding the presence of coal ash in the samples. Reportedly, all the soils removed from the excavation were returned to the excavation. The report indicated a slight petroleum odor and a sheen were observed in one monitoring well during groundwater sampling. However, the laboratory reported little to no PAHs or extractable petroleum hydrocarbon (EPH) carbon ranges in the sample collected from that well.

In March 2005, the LSP filed a Class B-2 RAO and AUL, supported by a Method 2 Risk Characterization. The contaminants of concern were identified as gasoline constituents in soil and groundwater resulting from the former gasoline UST. Although the LSP initially stated in the March 2003 RNF that PAHs in soil were a contaminant of concern, in the March 2005 RAO submittal the LSP attributed the source of the PAHs at the site to coal ash based on the assertion that the laboratory reportedly visually observed coal ash in the samples. As a result, the LSP claimed that further evaluation of PAHs was not required. However, in the Risk Evaluation section of the RAO, the LSP did address the PAHs. S/he stated that the average concentration of PAHs (with the exception of benzo(a)pyrene) was less than the current S-1 Standard. Exposure Point Concentration (EPC) calculations were not provided in the RAO. S/he further stated that, “all PAH

concentrations are below the proposed (Wave 2) concentrations." S/he wrote that, based on the concentrations, a condition of 'no significant risk' existed with respect to PAHs in soil.

The LSP stated in the RAO that the groundwater plume for the gasoline release "has been detected to extend to the south-southeast to the property line." A building was located on the adjacent property immediately adjacent to the property line and well within thirty feet of a monitoring well (Well 6) However, the LSP concluded that the GW-2 Standards did not apply to the abutting structure. The last result for C_5-C_8 aliphatics (3,760 µg/l) at that well (Dec. 2004) was above the then current GW-2 Standard of 1,000 µg/l as well as being above the 2006 version of the MCP Standard, which was also 1,000 µg/l. In the contaminant table of results provided in the RAO, the LSP identified the proposed Wave 2 Standard as being 3,000 µg/l. Although the LSP did not calculate the EPC for C_5-C_8 aliphatics, the five sample temporal average was 2,520 µg/l. Further, the calculated EPC (the calculation or result of which the LSP did not provide) for C_5-C_8 aliphatics in soils reportedly included one result (5,130 mg/kg from Well-4) which exceeded the Upper Concentration Limit. The LSP stated that the concentrations of VPH and PAHs in soil and groundwater at the site pose 'No Significant Risk' but had not yet been reduced to background. Citing the expense of excavating and treating the impacted soil (particularly where impacted soil was located beneath a permanent structure) and that most of the constituents in gasoline are biodegradable under aerobic and anaerobic conditions, the cost outweighed the benefit of reducing contaminant concentrations. Instead, the LSP created an AUL to prevent consumptive gardening and subsurface activities five feet or more below grade. The LSP determined that a condition of 'No Significant Risk' existed with respect to indoor air. S/he stated that results from the two indoor air sampling events did not detect VPH above the 'Estimated Background Indoor Air Concentrations.'

On August 22, 2006, MassDEP issued a NOAF/NON regarding the RAO. MassDEP concluded that the RAO did not fully evaluate the soil vapor migration pathway or extent of groundwater contamination, in violation of 310 CMR 40.0904(2)(a) and (c), based on the following:

- Soil samples collected from boring Well-4, located within the building, indicated concentrations of VPH (5,130 mg/kg C_5-C_8 aliphatics and 2,380 mg/kg C_9-C_{10} aromatics) that exceeded the applicable Method 1 S-3/GW-2 Standard of 500 mg/kg. Groundwater samples collected from Well-4 also exhibited concentrations of VPH (average concentration of C_5-C_8 aliphatics was 3,772 µg/l and C_9-C_{12} aliphatics was 1,440 µg/l) in excess of the GW-2 Standard of 1,000 µg/l. In February 2004, the maximum groundwater concentrations in Well-4 were: 7,740 µg/l C_5-C_8 aliphatics, 2,880 µg/l C_9-C_{12} aliphatics, and 8,860 µg/l C_9-C_{10} aromatics.
- The highest concentrations of petroleum hydrocarbons (44.2 and 80.1 µg/m^3 C_5-C_8 aliphatics) detected in indoor air were in samples collected from the "WSC Unit" portion of the building on December 5, 2003. When indoor air samples were collected in February 2004, when maximum concentrations of hydrocarbons were detected in groundwater, confirmatory sampling of the "WSC Unit" does not appear to have been performed.
- An average groundwater concentration of 2,520 µg/l C_5-C_8 aliphatic hydrocarbons, exceeding the Method 1 GW-2 Standard of 1,000 µg/l, was

detected in monitoring well Well-6. Well-6 is the most hydrogeologically downgradient well and is located approximately 25 feet upgradient of a commercial building on the adjacent property. Additional downgradient groundwater monitoring wells or soil vapor points were not installed to determine the extent of groundwater contamination or potential contaminant migration into indoor air at the adjacent building for purposes of risk characterization.

MassDEP also noted many administrative deficiencies with the AUL. MassDEP required the submittal of either a Revised RAO with an Amended AUL or an RAO Retraction.

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LSP Board Complaint 07C-08

LICENSE SUSPENSION

On August 28, 2009, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her LSP license for a period of eighteen months. The LSP is also required to complete certain continuing education courses. If the courses are not completed within certain timelines set out in the ACO, the LSP's license will be suspended for an additional ninety (90) days. The Board and the LSP entered into the ACO before the Board had completed an investigation of a disciplinary complaint filed against the LSP.

In December 2007, the Massachusetts Department of Environmental Protection (MassDEP) filed a complaint with the Board alleging, among other things, that the LSP misrepresented site conditions at a hazardous waste site in a written submittal to MassDEP. The Board was investigating the allegations in the complaint when the LSP and the Board entered into the ACO.

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LSP Board Complaint 07C-01

PUBLIC CENSURE

On July 23, 2008, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. The LSP did not admit to any violation of law or regulation. Pursuant to the terms of the ACO, the Board issued a "Public Censure" against the LSP and also required the LSP to complete certain continuing education courses.

Prior to the entry of the consent agreement, the Board was in the process of investigating allegations of professional misconduct contained in a complaint filed by a former client against the LSP. While the Board dismissed the majority of the allegations in the original complaint as outside the Board's jurisdiction, the Board was in the process of investigating whether the LSP had excavated contaminated soil at the site without properly notifying and seeking approval from MassDEP. The parties entered into the ACO before the investigation was completed.

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LSP Board Complaint No. 06C-08

LICENSE SUSPENSION

On January 1, 2011, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the license of an LSP for a period of fifteen months for violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violations of any law or regulation but agreed not to contest the Board's findings and accepted a fifteen-month suspension of his/her license. The LSP is also required to complete certain continuing education courses. If the courses are not completed by certain deadlines set out in the ACO, the LSP's license will be suspended for an additional ninety (90) days. This action resulted from a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP").

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

I. The LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02 (1) by failing to act with reasonable care and diligence in regard to the disposal sites outlined below. Examples of conduct that violated this regulation included, without limitation, the following:

i. The LSP failed to confirm whether an Imminent Hazard condition existed in the western unit of the on-site building at Site A after the unit became occupied and as indoor air sampling results indicated PCE concentrations began to rise.
ii. The LSP did not collect adequate confirmatory data before closing out an IRA condition regarding an LNAPL release at Site A.
iii. The LSP failed to submit a new Numerical Ranking Scoring (NRS) sheet once the western unit at Site A became occupied.
iv. The LSP did not collect sufficient data and information to adequately demonstrate that a condition of no significant risk existed at Site B prior to filing a Class A-2 RAO in 2003.
v. The LSP did not collect sufficient data or information before filing a Class C RAO for Site B to adequately support that contamination at the site would not pose a substantial hazard.
vi. The LSP did not timely inform the client of a reportable condition of Substantial Release Migration that required reporting within 72 hours.
vii. The LSP did not adequately demonstrate in a Class A RAO filed in 2005 for Site B that the source of a fuel oil release at the site had been eliminated or controlled.
viii. The LSP failed to collect sufficient data to adequately define the nature and extent of contamination or to adequately determine whether a condition of no significant risk had been achieved prior to filing a Class B-1 RAO for Site C.
ix. The LSP failed to provide adequate support for the Downgradient Property Status opinion filed regarding Site D.

II. The LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

III. The LSP failed to comply with the Board's Rule of Professional Conduct 4.03(3)(d) by failing to disclose and explain in a waste site cleanup activity opinion material facts, data, other information, qualifications or limitations known to him which may have tended to have supported or lead to a contrary of significantly different waste site cleanup activity opinion including, without limitation, the history of USTs at Site D in the January 2005 DPS Opinion for that site.

Background of Case

Site A

Site A was located on a commercial property with a slab-on-grade building. From the 1920s to the early 1990s, an automotive sales and service facility occupied the site. A dry cleaning business occupied the western portion of the on-site building from approximately 1963 to 1975. At the time the LSP became involved with the site in early 2001, the on-site building was separated into three units. At that time, the eastern unit was occupied by a video store, the middle unit was a U.S. post office and the western unit was vacant.

In 1997, reportable concentrations of the chlorinated solvents tetrachloroethylene (PCE) and 1,1-Dicholorethylene were discovered in groundwater on the property. MassDEP issued a Release Tracking Number for this release condition in October 1997. In October 2000, 0.81 feet of light non-aqueous phase liquid ("LNAPL"), later described as kerosene, was discovered in one monitoring well. In late 2000, MassDEP issued a Release Tracking Number for the LNAPL release and approved an assessment-only Immediate Response Action (IRA) Plan. The Respondent became LSP-of-Record in approximately January 2001.

A. Facts Regarding Potential Imminent Hazard Condition

The Respondent stated, in a March 2001 letter to MassDEP that discussed the proposed IRA activities planned for the site, that s/he would be collecting indoor air samples in the western unit prior to the initiation of a depressurization system s/he planned to install in the unit, and the results of the air testing would be utilized to prepare a Method 3 Imminent Hazard Evaluation.

In April 2001, the LSP submitted an IRA Plan to MassDEP regarding the chlorinated solvent release that proposed the use of a Soil Vapor Extraction (SVE) system to prevent possible migration of contaminant vapors into indoor air in the vacant western unit. Attached to the IRA Plan was a Method 3 Risk Characterization prepared by a professional risk assessor that did not include an Imminent Hazard Evaluation. In June 2001, MassDEP issued a conditional approval of the IRA Plan but also required submission of a revised Risk Characterization that included an Imminent Hazard Evaluation within 14 days.

In August 2001, the LSP submitted a Method 3 Risk Characterization including an Imminent Hazard Evaluation dated June 19, 2001 that had been prepared by a professional risk assessor. The Imminent Hazard Evaluation stated that an Imminent Hazard would exist in the vacant unit if it were occupied. The Imminent Hazard evaluation was based on a measured indoor air concentration for PCE of 6.6 ppbV.

In January 2002, the LSP filed a Phase II Comprehensive Site Assessment.

Among other things, the Phase II submittal stated that high levels of the chlorinated solvents PCE (as high as 49,000 µg/L in February 2001) and TCE (as high as 68,800 µg/L in June 2001) were detected in groundwater samples collected from a monitoring well located in the vacant unit. The LSP attached the April 2001 Method 3 Risk Characterization and Imminent Hazard Evaluation to the January 2002 Phase II submittal. In the text of the Phase II submittal, the LSP stated that no Imminent Hazard existed at the site and did not indicate in the text that the 2001 Imminent Hazard Evaluation had determined that an Imminent Hazard was estimated to exist in the vacant unit if occupied.

In October 2002, after reviewing the Phase II submittal, MassDEP issued a Notice of Need to Submit a Modified IRA Plan. MassDEP wrote that, because the indoor air data presented in the Phase II submittal indicated that levels of chlorinated solvents detected in the vacant unit could present an Imminent Hazard condition if the unit were occupied, the existing sub-slab system was not effective in controlling vapors in the building and the system must be modified or other more effective remedial approaches must be proposed in the modified IRA Plan.

In November 2002, MassDEP received a new IRA Plan from the LSP. The LSP wrote in the document that a new tenant had been identified for the vacant unit and the sub-slab system would be based on the new design of the unit. The Respondent stated that a new round of indoor air sampling would be conducted in the unit once remodeling was complete. In December 2002, MassDEP issued a conditional approval of the IRA Plan. MassDEP stated in the document that the potential for Imminent Hazard conditions must be re-evaluated based on the fact that contaminants had been detected in indoor air in the unit in the past. MassDEP required that results of indoor air sampling and a new Imminent Hazard evaluation be submitted in the next IRA Status Report.

In January 2003, the LSP submitted an IRA Modification Plan to MassDEP that stated remodeling of the western unit was ongoing. The LSP also stated that, once the remodeling of the unit was complete, s/he would conduct indoor air sampling in the unit and would send the results to a professional risk assessor to prepare an updated Method 3 Risk Characterization.

In February 2003, the LSP submitted an IRA Status Report that detailed remedial actions performed to date in the vacant unit that included placement of a 6 ml plastic barrier over the existing concrete slab in the vacant unit, and placement of two to three inches of additional concrete over the plastic barrier. In a March 2003 update to the February 2003 IRA Status Report, the LSP stated that indoor air sampling would not be completed within the vacant unit until the remodeling of the unit was complete.

MassDEP received another IRA Status Report on October 3, 2003. The report was dated August 15, 2003. The report indicated that the tenant (a kitchen design store) had moved into the western unit and that indoor air sampling had taken place on April 30, 2003 when the sampling results were non-detect and July 30, 2003 when PCE was detected in one of two samples at a concentration of 2.1 ppbV. Despite the statements in the January 2003 IRA Modification Plan, the LSP did not include an updated Method 3 Risk Characterization in the IRA Status Report filed with MassDEP in October 2003.

Instead, the LSP again referenced the April 2001 Risk Characterization. In the October 2003 submittal, the LSP stated that the conclusion of the April 2001 Risk Characterization was that no risk was considered to exist at the site. The LSP did not mention that the April 2001 Risk Characterization determined that an Imminent Hazard could exist once the vacant unit became occupied, even though by January 2003 the unit was occupied.

The LSP filed another IRA Status Report in February 2004. This report reported the results of indoor air samples collected on October 30, 2003 (PCE was 1.2 ppbV in one of two samples) and January 30, 2004 (PCE was 2.1 in one sample and 3.2 ppbV in the other). The LSP stated in the text of the February 2004 report that no Imminent Hazard existed in the western unit. However, no updated Imminent Hazard Evaluation was included with the submittal and the submittal also did not state whether the recent indoor air sampling results had been forwarded to a risk assessor. The LSP instead again referenced the 2001 Risk Characterization and stated that, at the time it was completed, no Imminent Hazard was considered to exist. Again, the LSP did not mention the conclusion in the April 2001 Risk Characterization that an Imminent Hazard would be expected in the vacant unit if occupied. There is no indication in the February 2004 report that the LSP's conclusion that no Imminent Hazard condition existed in the western unit was based on any calculation of what level of PCE in indoor air would constitute an Imminent Hazard.

The LSP submitted another IRA Status Report on February 2, 2005 that discussed the results of indoor air sampling conducted on October 29, 2004 when PCE was detected in two samples at concentrations of 2.6 and 4.0 ppbV, respectively. The LSP filed another IRA Status Report on April 4, 2005 that included indoor air sampling data collected on January 29, 2005 when PCE was detected at 2.5 and 5.5 ppbV. Both the February 2005 and the April 2005 reports state that no Imminent Hazard exists and reference the April 2001 risk characterization that concluded an Imminent Hazard could be present if the western unit were occupied.

On May 5, 2005, MassDEP staff contacted the LSP to say that they believed an Imminent Hazard condition was present in the western unit based on the recent levels of PCE detected in indoor air. On this same date, MassDEP staff made an unannounced visit to the site and concluded that the SVE system was not operating properly due to missing valves on the piping that allowed short-circuiting of the air flow in the system. MassDEP required that the ports be sealed to restore vacuum to the system. MassDEP inspected the system on November 30, 2005 and determined the system had been repaired. Subsequent IRA Status Reports indicated that the modifications to the SVE system abated any Imminent Hazard condition in the unit.

It was not until June 2006, two and a half years after MassDEP first instructed the LSP to prepare it and after the LSP stated in MassDEP submittals s/he would do so, that the LSP submitted to MassDEP an updated Method 3 Risk Characterization and Imminent Hazard Evaluation prepared by a professional risk assessor. The risk assessor concluded that an Imminent Hazard did not exist in the western unit based on indoor air

sampling results collected in April 2006 when PCE was detected at a concentration of 0.8 ppbV.

On December 14, 2006, the LSP submitted another updated Imminent Hazard Evaluation prepared by the risk assessor. The evaluation determined no Imminent Hazard existed based on samples collected in the unit on October 28, 2006 when PCE was detected at a concentration of 2.2 ppbV. This version of the Imminent Hazard Evaluation stated: "the site remains no Imminent Hazard, as risks equal but statistically do not exceed 10^{-5}."

It wasn't until February 2007 that the LSP communicated a minimum indoor air value for PCE that would constitute an Imminent Hazard if exceeded. In an email to MassDEP dated February 7, 2007, the LSP stated that 2.4 ppbV of PCE was the indoor air value that would constitute an Imminent Hazard if exceeded. Based on this 2.4 ppbV PCE value, an Imminent Hazard did exist in the western unit on three of the previous sampling dates: January 30, 2004 (PCE was 3.2 ppbV); Oct. 29, 2004 (PCE was 4.0 ppbV); and January 29, 2005 (PCE was 5.5 ppbV).

B. Facts regarding filing an IRA Completion Statement for the LNAPL

In August 2001, the LSP submitted an IRA Completion Statement (IRAC) regarding the LNAPL condition first discovered at the site in October 2000. The LSP stated in the IRAC that, after the bailing of LNAPL from the well was stopped in February 2001, LNAPL returned to a thickness of nearly 12 inches.

In April 2001, the LSP installed a peristaltic pump in the well and operated it on a timer for short periods until June 21, 2001. The LSP observed the well for a two-month period after June 21, 2001 and the LNAPL did not return. The LSP determined the IRA was complete and filed an Immediate Response Action Completion Statement in August 2001.

C. Facts regarding the failure to complete a new Numerical Ranking Scoring Sheet after the western unit became occupied

After the kitchen remodeling store moved into the western unit in the fall of 2003, the LSP did not rescore the site using the Numerical Ranking System (NRS) even though there was now a completed pathway due to the presence of PCE in indoor air and occupants. MassDEP determined the failure to rescore the site violated 310 CMR 40.0530. In the spring of 2006, MassDEP entered into an Administrative Consent Order with Penalty (ACOP) with the site owner that imposed a $27,000 penalty, $10,000 of which had to be paid. Among the issues raised in the ACOP were: the failure to report an Imminent Hazard condition in the kitchen remodeling store unit; failure to keep the soil vapor extraction system at the site operating properly; and the failure to submit a new NRS scoresheet after the vacant unit became occupied. The ACOP required that a new NRS scoresheet be submitted by June 30, 2006. The LSP filed the scoresheet on June 28, 2006. S/he scored the site as a Tier II. MassDEP did not accept the LSP's June 2006

submittal and required the site be rescored. The LSP rescored the site and concluded the site was a Tier 1C.

The Board's Conclusions regarding Site A

The Board concluded that the LSP's failure to confirm whether an Imminent Hazard condition existed in the western unit, particularly after the unit became occupied and as indoor air sampling results indicated PCE concentrations began to rise, violated the Board's standard of care at 309 CMR 4.02(1). The Board also concluded the LSP violated 309 CMR 4.02(1) by not collecting adequate confirmatory data before closing out the IRA condition regarding the LNAPL release on the property. The Board determined that the LSP's failure to submit a new Numerical Ranking Scoring (NRS) sheet once the western unit became occupied violated 309 CMR 4.02(1) and 309 CMR 4.03(b).

Site B

The Site B property is occupied by a manufacturer of pre-fabricated wooden structures. Groundwater at the property is classified as GW-1 due to the presence of an on-site supply well and because the site is located in an Interim Wellhead Protection Area. Wetlands are located adjacent to the site.

Site B had three separate reportable release conditions. The first condition was a release of No. 2 fuel oil reported in January 1995 as the result of a photoionization detector ("PID") reading of greater than 100 parts per million (ppm) during the removal of an underground storage tank. The second release was reported in February 1995 during assessment of the fuel oil release. Groundwater samples from two locations indicated concentrations of contaminants that exceeded GW-1 reportable concentrations within 500 feet of an on-site supply well. One of the samples, collected near the former fuel oil UST, had an elevated concentration of TPH and was considered part of the original petroleum release. The other sample was collected near two former wood preservative dip tanks and contained constituents representative of wood preservative and was given a separate release tracking number. The third release was reported to MassDEP October 1995 after separate-phase wood preservative (pentachlorophenol) was detected in a monitoring well located near the former dip tanks.

On June 16, 2003, the LSP submitted a Response Action Outcome (RAO) Statement to MassDEP that included a Class A-2 RAO for the fuel oil release on the property and a Class C RAO for the other two release conditions related to the release of wood preservative. In October 2005, MassDEP issued Notices of Noncompliance/Notices of Audit Findings regarding the both the Class A and Class C RAO Statements. Among the violations cited by MassDEP in the Notices of Noncompliance were: the failure to monitor for all site contaminants in the public water supply well, the failure to determine Exposure Point Concentrations for drinking water and the failure to treat the supply well as a separate Exposure Point, pursuant to 310 CMR 40.011(7), 40.0924(2)(a) and 40.0926(1), respectively.

The June 2003 Class A RAO for the fuel oil release relied on one set of groundwater data collected in 1999. The LSP did not sample the on-site water supply well for either Extractable Petroleum Hydrocarbons (EPH) or Volatile Petroleum Hydrocarbons (VPH) to assess whether the well had been impacted by the fuel oil release before filing the Class A RAO statement. The LSP only sampled the on-site supply well on one occasion for pentachlorophenol in January 2002 before filing the 2003 Class C RAO related to the pentachlorophenol release. Also the Class C RAO did not contain any provision for any continued sampling or monitoring of the supply well during the five-year period the Class C RAO would be in effect. The LSP did not obtain any information regarding the depth of the on-site supply well or its pumping rates to assess the possibility that operation of the supply well could draw the contamination in groundwater toward it. The LSP also did not install any bedrock monitoring wells even though boring logs indicated the depth to bedrock at the site was approximately ten feet, and s/he did not perform pump tests to evaluate the bedrock aquifer as a potential migration pathway.

In the 2003 Class C RAO related to the pentachlorophenol release, the LSP evaluated risk for exposure to soil from the pentachlorophenol by using soil data collected outside the release area and did not use soil data collected closer to the dip tanks that were the source of the release even though these data indicated higher levels of contamination.

In January 2006, the LSP submitted a revised Class A RAO for the fuel oil release and a revised Class C RAO for the other two release conditions. The Class A RAO submitted in January 2006 also relied on the one set of groundwater data collected in 1999. The LSP collected another round of groundwater data in December 2005 but declined to report the results because s/he believed the groundwater monitoring wells had been impacted by surficial run-off. The LSP did not collect additional samples but instead chose to rely on the 1999 data.

Data included in the January 2006 RAO submittal indicated that a concentration of 122 parts per billion (ppb) of C11-C22 aromatic hydrocarbons was detected in a water sample collected from the on-site supply well on December 8, 2005. This sampling result constituted a Condition of Substantial Release Migration requiring notification to MassDEP within 72 hours pursuant to 310 CMR 40.0313(5). The LSP did not inform his/her client of the need to report the condition. A month later on January 4, 2006, the LSP collected another sample from the supply well. Laboratory analysis conducted on this sample indicated that this contaminant was not present above the laboratory reporting limit and, as a result, the LSP concluded that the December 2005 sampling result was an anomaly.

In the January 2006 RAO Statement, the LSP stated that prior to the December 8, 2005 sampling event EPH had not been detected in the supply well but the supply well had not in fact been sampled for EPH prior to that date.

In February 2007, MassDEP issued an Administrative Consent Order with Penalty (ACOP) to the site owner related to both the 2003 RAO documents and the 2006 RAO documents and required the site owner to pay a $10,000 penalty. Among the issues cited in the ACOP were the following:

a) The revised RAO documents submitted in January 2006 indicated that a concentration of 122 ppb C11-C22 aromatic hydrocarbons was detected in a groundwater sample collected from the on-site supply well on December 8, 2005. This condition constituted a condition of Substantial Release Migration (SRM) requiring notification to MassDEP within 72 hours. MassDEP was not notified of the SRM condition and need to conduct an IRA until February 3, 2006 in violation of 310 CMR 40.0313(5) and 40.0412(3);

b) Failure to sample the public water supply well with adequate frequency to determine a conservative EPC in violation of 310 CMR 40.1004. The revised RAO indicated the well was sampled two times just one month apart (December 2005 for EPH and January 2006 for VPH and EPH) but DEP guidance recommends a minimum of four quarterly sampling events;

c) The LSP did not install bedrock monitoring wells to determine the vertical extent of contamination and did not evaluate the bedrock aquifer as a potential migration pathway by performing assessment activities such as pump tests in violation of 310 CMR 40.0904(2)(a) and (c);

d) The Class C RAO did not contain any provision for sampling the public water supply well at the site for all site contaminants and contained no provision for continued groundwater monitoring and public water supply monitoring during the five-year period as required under a Class C RAO. As a result, the Respondent failed to demonstrate that contamination concentrations in groundwater would not pose a Substantial Hazard to human health if the concentrations continued to be present for several years in violation of 310 CMR 40.1050(2).

e) The Revised Class A-2 RAO submitted in January 2006 did not demonstrate that the source of the fuel oil had been eliminated or controlled, in violation of 310 CMR 40.1003(5), because concentrations of C19-C18 aliphatic hydrocarbons had increased in one of the on-site monitoring wells from 11,800 ppb to 19,400 ppb between April 2003 and December 2005.

The Board's Conclusions Regarding Site B

The Board concluded that the LSP did not collect sufficient data and information to adequately demonstrate that a condition of no significant risk existed at the site prior to filing the Class A-2 RAO in 2003 regarding the fuel oil release. Some examples of the failure to collect sufficient data and information include: relying on one set of groundwater data collected in December 1999 despite the fact that analysis of groundwater samples collected in June 1997 showed concentrations above Method 1 standards; not sampling the on-site supply well for EPH or VPH prior to filing the RAO

submittal; and not collecting relevant information about the on-site supply well such as its depth or pumping rates to assess whether contamination may be drawn toward it.

MCP regulations (see 310 CMR 40.1035) require that a Class A RAO demonstrate that a condition of no significant risk exists at a site. The Board concluded that the LSP's failure to demonstrate a condition of no significant risk had been achieved violated the Board's standard of care (309 CMR 4.02(1)) and the requirement to follow the MCP (309 CMR 4.03(3)(b)).

The Board also determined that the LSP did not collect sufficient data or information before filing the 2003 Class C RAO to adequately support that contamination at the site would not pose a substantial hazard as required by 310 CMR 40.1050(2). The Board concluded that the 2003 Class C RAO violated the Board's standard of care (309 CMR 4.02(1)) and the requirement to follow the MCP (309 CMR 4.03(3)(b)).

The Board concluded that the LSP failed to timely inform his/her client of a reportable condition of Substantial Release Migration that required reporting within 72 hours pursuant to 310 CMR 40.0313(5). The Board concluded that by failing to inform his/her client of the need to report this condition, the LSP violated the Board's standard of care (309 CMR 4.02(1)) and the requirement to follow the MCP (309 CMR 4.03(3)(b)).

The Board concluded that the LSP's 2006 Class A RAO submittal did not adequately demonstrate that the source of the fuel oil release at the site had been eliminated or controlled as required by 310 CMR 40.1003(5). The Board concluded that the 2006 Class A RAO opinion violated the Board's standard of care (309 CMR 4.02(1)) and requirement to follow the MCP (309 CMR 4.03(3)(b)).

Site C

The Site C property had been used as an automobile service facility from approximately 1939 until approximately 1980 when the property began to be used as an auto body repair shop.

In July 2003, an environmental consultant prepared an assessment report for the Site C property that stated two USTs had been removed from the north side of the property in 2003 – a 1,000-gallon #2 fuel oil UST in April 2003 and a 100-gallon waste hydraulic oil UST in June 2003.

During the July 2003 assessment, the environmental consultant collected three soil samples and analyzed them for EPH and VPH. Sampling results for one of the three samples indicated concentrations of both EPH fractions and target Polycyclic Aromatic Hydrocarbon (PAH) analytes exceeding reportable concentrations (RCS-1), including some of the carcinogenic PAHs, (Benzo(a)anthracene, Benzo(a)pyrene, and Benzo(b)fluoranthene). Analytical data for the other two samples indicated low concentrations (less than reportable concentrations) of EPH fractions and target analytes.

The sampling locations for these three samples were not recorded. In March and April 2004, the prior consultant collected eight additional soil samples from borings installed throughout the site. Reportable concentrations of C11-C22 Aromatics were detected in two soil samples collected adjacent to the former 100-gallon UST.

In April 2004, the prior consultant installed four groundwater monitoring wells and collected groundwater samples from them within 24 hours after the wells were installed. These groundwater samples were analyzed for EPH and VPH. Results indicated concentrations of EPH fractions above reportable concentrations (RCGW-2) in three of the wells, and reportable concentrations of the target PAH analyte Phenanthrene in one well.

The LSP began work at the property in May 2004. S/he collected a round of groundwater samples from the four monitoring wells installed in April 2004 by the prior consultant. Analytical results from this second round indicated significantly lower concentrations with only one EPH fraction exceeding reportable concentrations (RCGW-2) in two of the four wells.

On June 1, 2004, the LSP reported a 120-day release to MassDEP based on the soil data collected by the prior consultant in 2003 and the groundwater data the LSP had collected in May 2004. The LSP did not believe the groundwater sampling data collected by the prior consultant in April 2004 were representative because the samples were collected within 24 hours after the wells were installed. The Respondent did not collect any additional soil or groundwater samples after filing the release notification in June 2004.

In July 2004, the LSP filed a Class B-1 RAO Statement based on the soil data collected by the prior consultant and the groundwater data collected by the LSP in May 2004. In the RAO submittal, the LSP stated that sources of the release at the site were the former 100-gallon waste hydraulic oil UST and the 1,000-gallon former #2 fuel oil UST.

The LSP stated in the July 2004 RAO Statement that the target PAH analytes detected in soil samples at the site were attributable to coal ash in the fill material at the property and were not associated with a reportable release at the property. Most of the PAHs were detected in one of the three soil samples collected by the prior consultant that had unknown sampling locations. Even though the LSP assumed, as stated in the July 2004 RAO Statement, that these three soil samples were likely collected from the former UST excavations, s/he nevertheless assumed that the PAHs were attributable to coal ash rather than to the on-site release, but did not provide technical data or information to support this conclusion.

On May 11, 2005, MassDEP issued an NON/NOAF regarding the RAO Statement. Among the violations cited by MassDEP were: 1) the LSP did not adequately determine the horizontal and vertical extent of contamination in soil in violation of 310 CMR 40.0904(2) because the LSP did not collect any soil samples in the vicinity of the former 1,000-gallon UST, and only two soil samples were collected from the area

immediately adjacent to the former 100-gallon UST; and 2) the Exposure Point Concentrations (EPCs) in soil did not provide a conservative estimate of the exposure in violation of 310 CMR 40.0920 because the EPCs were calculated by averaging 11 soil samples collected from across the property, and because analytical data for a soil sample that indicated a TPH concentration of 2,290 mg/kg that exceeded MassDEP's S-1/GW-3 standard of 800 mg/kg was attached to the RAO submittal but was not discussed or included in the risk characterization.

In June 2005, the LSP submitted a Revised RAO Statement that included new soil sampling data. The LSP advanced five soil borings through the former 1000-gallon UST and former 100-gallon UST graves. The LSP stated in the submittal that soil samples were collected at a depth that was below the evident fill material in the excavations. Low concentrations of C11-C22 Aromatics were reported present in two of the soil samples collected from the 1000-gallon tank grave; all other results were below laboratory detection limits.

In the June 2005 Revised RAO Statement, the LSP stated that the soil sample with the high TPH concentration that was not discussed or included in the risk characterization for the July 2004 RAO submittal had been collected by the prior consultant in 2004 as part of a Limited Removal Action (LRA) to address a small quantity of oil-stained soil under the concrete floor of the on-site building. S/he stated that the sample was collected from the stockpiled soil excavated during the LRA that was later removed from the site. After the Complaint Review Team (CRT) investigating the complaint against the LSP asked the LSP to provide documentation regarding the LRA action conducted by the prior consultant, the Respondent sent a letter dated November 16, 2008 to the CRT that stated that s/he did not in fact have any documentation that an LRA had been conducted at the property.

The LSP stated in the July 2004 RAO that the source of the contamination at the site was the two former USTs. However, in the November 16, 2998 letter to the CRT, the LSP explained why s/he had calculated the soil EPCs at the site by averaging together eleven soil samples collected across the property by stating:

> I chose to average the soil data collected from across the site to calculate soil EPCs (rather than just the release area, as I do on all other sites), since it was never conclusively determined that the USTs were the source of the soil contamination, and I tried to provide an RAO Statement commensurate with the contamination identified.

The Board's Conclusions Regarding Site C

The Board concluded that the LSP did not collect sufficient data to adequately define the nature and extent of contamination at the site or to adequately determine whether a condition of no significant risk had been achieved before filing the July 2004 RAO Statement, in violation of 310 CMR 40.1004 and 310 CMR 40.1035. Some examples of the failure to collect sufficient data include: relying on only one round of

groundwater samples collected from the site in May 2004, particularly where the groundwater samples collected in April 2004 indicated significantly higher concentrations of contamination; opining in the RAO submittal that the PAHs detected in soil samples were attributable to coal ash without providing technical data or information to support this conclusion; relying on data from three soil samples collected by the prior consultant without knowing the sampling locations; not discussing or including another soil sample that had a high concentration of TPH; not collecting any sampling data in the vicinity of the former 1000-gallon UST; and calculating soil EPCs by averaging together eleven soil samples collected across the property. The Board concluded that the July 2004 RAO submittal violated the Board's standard of care (309 CMR 4.02(1)) and the requirement to follow the MCP (309 CMR 4.03(3)(b)).

Site D

The Site D property had been used as a motor freight station from 1911 to the early 1980s and more recently as a medical waste incinerator facility. Underground storage tanks were in use at the property to hold gasoline, diesel and #2 fuel oil from 1938 until at least 1991. The property had a total area of 22,800 feet and, at the time the LSP performed professional services there, the property was occupied by a two-story building that covered approximately 70 percent of the property. The other 30 percent of the property was asphalt-covered.

A Preliminary Assessment Report dated May 2004, prepared by the LSP's firm, indicated that a total of twelve (12) USTs had been located at the site at various times. A Ground Penetrating (GPR) Survey was conducted in February 1993 that indicated no USTs were present on the property at that time.

Beginning in June 2004, the LSP began a subsurface investigation on the property. During the investigation, a reportable release of petroleum hydrocarbons was discovered in soil samples from two soil borings located in the northwestern corner of the property and also in a groundwater sample collected from a monitoring well located in the northwestern corner of the property. The release was reported to MassDEP in November 2004.

In January 2005, the LSP filed a Downgradient Property Status (DPS) Opinion. In the opinion, the LSP stated that the petroleum contamination detected in soil and groundwater in the northwest corner of the 0 Farley Street property was attributable to a release from a former 500-gallon gasoline UST located on an adjacent property.

The adjacent property had two reported releases: evidence of a release of gasoline during the removal of a 500-gallon UST in 1992, and the discovery of eight inches of gasoline in a groundwater monitoring well located adjacent to a former UST in 1993. The 500-gallon UST was located adjacent to the northwest side of the Site D property. In 1999, a Response Action Outcome Statement was filed regarding these two releases. The RAO submittal stated that groundwater flow direction was to the north which would be toward the Site D property.

In the January 2005 DPS Opinion, the LSP stated that the contamination present in soil and groundwater at the Site D property was attributable to the release from the 500-gallon former gasoline UST on the adjacent property. As support for this conclusion, the LSP detailed the history regarding USTs on the adjacent property; discussed the two reported releases on the adjacent property; stated that a groundwater flow survey conducted at the Site D property in December 2004 indicated groundwater flow was to the north and, therefore, the adjacent property was located directly upgradient of the monitoring well on the Site D property where the highest level of contamination had been detected; stated that EPH contamination had been detected in soil only at depths greater than seven feet below grade; and that no elevated levels of VPH or EPH had been detected in soil or groundwater samples obtained from within or directly downgradient of any of the former USTs on the Site D property.

While the LSP discussed in detail the history of former USTs on the adjacent site, s/he provided little detail about the former USTs on Site D. The LSP wrote in the DPS submittal:

> There has been documented underground storage of gasoline, diesel fuel and #2 fuel oil at the subject site since 1938. The available information on file at the [Town] Fire Department was inconclusive and contradictory. However, a "GPR Survey" conducted in February of 1993 by … indicated that there are no USTs present at the site.

While the LSP stated in a 2004 Preliminary Assessment Report for the site that a total of 12 USTs were present on the Site D property at various times, s/he did not discuss in the DPS Opinion the various USTs that had been at the site or what substances they were believed to have held. The site figure in the DPS Opinion shows the locations of only four USTs, two of which were located in the northwestern portion of the site. Of the other former USTs not indicated on the site figure, several others had been documented to have been located in the northwestern portion of the site at or adjacent to the locations where the soil contamination was discovered.

The LSP determined groundwater flow direction at Site D based on a single round of groundwater data collected in December 2004. Despite the fact that EPH fractions were found to be present in groundwater at Site D and the fact that former USTs were known to have been located in the areas where the soil contamination had been discovered, the LSP opined that the contamination was related to a former gasoline UST on the adjacent property and that the EPH fractions were present because the gasoline was old. The LSP did not do any additional analysis such as fingerprint testing to confirm the contamination was from gasoline as opposed to diesel or No. 2 fuel oil, or lead testing to confirm the contamination was from old gasoline.

In February 2006, MassDEP issued a Notice of Noncompliance/Notice of Audit Findings terminating the LSP's DPS Opinion. MassDEP stated that the DPS Opinion had not met the requirements of 310 CMR 40.0183(4) in the following ways: 1) potential

on-site sources had not been sufficiently evaluated because a number of USTs had been formerly located on the Site D property including in the northwestern portion of the property where the impacted borings and monitoring wells were located but the Respondent did not discuss all of the former tanks, did not indicate where they had been located and included no pertinent details about them such as their condition upon removal or what they had held; 2) groundwater flow direction had not been adequately determined because the available groundwater data indicated there may be a component of groundwater flow from Site D to the adjacent property; and 3) the LSP did not provide a clear description of how releases at the adjacent property may have migrated to Site D because s/he did not compile and evaluate the various assessments of soil and groundwater conducted at the two properties to determine contaminant flow.

The Board's Conclusions regarding Site D

The Board concluded that the LSP failed to discuss and explain known available information that may have tended to have supported or led to a contrary or significantly different opinion including, without limitation, the history of USTs at the Site D property, in violation of 309 CMR 4.03(3)(d).

The Board also concluded that the LSP did not provide adequate support for the opinion that the Site D property was not the source of any of the contamination found there as required by 310 CMR 40.0183(4). The Board determined that the DPS opinion violated the Board's standard of care (309 CMR 4.02(1) and the requirement to follow the MCP (309 CMR 4.03(3)(b)).

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LSP Board Complaint No. 06C-03

LICENSE SUSPENSION

On August 29, 2008, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the license of an LSP for a period of two hundred and forty (240) days for violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violations of any law or regulation but agreed not to contest the Board's findings and accepted a two hundred and forty (240) day suspension of his/her license. The LSP is also required to complete certain continuing education courses. If the courses are not completed within certain timelines set out in the ACO, the LSP's license will be suspended for an additional ninety (90) days. This action resulted from a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP").

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

309 CMR 4.02 (1) by failing to act with reasonable care and diligence in regard to the disposal sites outlined below. Examples of conduct that violated this regulation included, without limitation, the following:

- The LSP failed to address an open IRA condition in a Phase II submittal regarding Site A when the LSP knew or should have known that required IRA activities (namely indoor air sampling at an adjacent residence) needed to be completed.

- In the Phase II submittal for Site A, failing to identify the residents in the adjacent residence as potential human receptors or to discuss vapor migration as a potential human exposure pathway to the adjacent residence.

- In an Imminent Hazard (IH) Evaluation submittal for Site B that was based on a Method 3 Risk Characterization, the LSP assumed that the occupants of two downgradient residences spent only four hours per day on the first floors of their homes despite the fact that both homes had bedrooms on the first floors that were used and one residence also had a first floor office.

- In the same IH Evaluation, the LSP relied on modeled indoor air data for the basements of the two residences that were orders of magnitude lower than the actual indoor air basement data collected by MassDEP, and were also two orders of magnitude lower than the actual indoor air sampling data collected by both MassDEP and the LSP on the first floors of both residences.

- In an RAO submittal based on a Method 3 Risk Characterization for Site C, the LSP did not adequately review the risk characterization prepared by a risk assessor and failed to note that some of the hazard indices cited in the Risk Characterization tables were above the limits allowed under the MCP and, therefore, that the LSP's conclusion that No Significant Risk Existed on the site was not adequately supported.

309 CMR 4.02(3) by failing to rely in part upon the advice of one or more professionals whom the LSP reasonably determined were qualified by education, training and experience at Sites B and C by relying on Method 3 Risk Characterizations prepared by risk assessors that the LSP knew or should have known were flawed.

309 CMR 4.03(3)(a) by failing to exercise independent judgment at Sites B and C by not reviewing and/or rejecting portions of the Method 3 Risk Characterizations that were flawed.

309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

309 CMR 4.03(3)(c) by, among other things, failing to review the MassDEP file when taking over as successor LSP-of-Record at Site A.

309 CMR 4.03(3)(d) by, among other things, failing to include indoor air sampling data MassDEP had obtained from the basements of two residences when preparing an Imminent Hazard Evaluation for Site B.

Background of Case

SITE A

The Site A property was very small in scale, measuring approximately 17 by 55 feet, and was located in a dense urban area. A dry cleaning business was located in a two-story wooden structure on the property. The two-story structure occupied over 90 per cent of the property with the east and west walls of the building abutting the buildings on neighboring plots and the south wall abutting the approximate property line. Adjacent to the east of the property was a building that had a residential apartment on the second floor.

In July 2001, the property owner reported a release to MassDEP of the dry cleaning solvent tetrachloroethene (PCE) to soil. In October 2001, MassDEP assigned a Release Tracking Number (RTN) to the release. In 2002, the prior consultant was engaged by the property owner to conduct additional assessment. In June 2002, this consultant discovered a second release condition on the property: greater than five milligrams per liter (5 mg/L) total volatile organic compounds (VOCs) were present in groundwater within 30 feet of the adjacent residence and within 15 feet of the ground surface. The consultant notified MassDEP of the release. MassDEP assigned a second RTN to the site for the new release condition and directed that Immediate Response Action (IRA) activities including indoor air sampling be performed at the adjacent residence.

The prior consultant submitted an IRA Plan for evaluation of indoor air at the adjacent residence to MassDEP on August 26, 2002. As stated in the IRA Plan, the objective was to evaluate indoor air conditions (relative to PCE) in the basement and second floor residential apartment of the building and to determine if a Critical Exposure Pathway (CEP) and/or a Condition of Substantial Release Migration (SRM) existed.

Another person had owned and operated the dry cleaning business on the Site A property since approximately April 1997 and leased it, with an option to buy, from the property owner. In October 2002, the LSP prepared a draft proposal regarding a limited subsurface investigation for the owner of the dry cleaning business who was considering purchasing the Site A property. The draft proposal indicated that the LSP was aware that IRA activities were required regarding the second release condition. The LSP prepared a

second proposal dated September 5, 2003 that also indicated the LSP was aware that IRA activities were required.

In January 2004, the LSP's client bought the Site A property and began taking responsibility for response actions. As of January 2004, the prior owner had not undertaken the required IRA activities. In June 2004, the LSP became LSP-of-Record for the site. On June 18, 2004, the LSP filed a Phase II Comprehensive Site Assessment, Phase III Comprehensive Site Assessment and Phase IV Remedial Implementation Plan Submittal (Phase II submittal) with MassDEP. The LSP indicated in his/her Phase II submittal that s/he was aware of both the original RTN and the second RTN that required the IRA activities. S/he stated in the submittal that s/he assumed the two RTNs had been linked in MassDEP's database. S/he wrote on page 1:

> On July 12, 2002, [the prior consultant]. … submitted a Phase I (Phase I) Site Investigation Report and Tier Classification on behalf of … the prior owner (former PRP) for the Site. …Please note that based on the review of the DEP's BWSC Site/Reportable Release Look Up searchable website, [the second RTN] was closed on July 12, 2002 (see attached printout). It appears that [the second RTN] has been linked to [the original RTN]. However, there is no mention of this in the Phase I/Tier Classification report, nor on the BWSC Transmittal Forms.

The LSP was incorrect when s/he stated in the Phase II submittal that the transmittal form filed with the prior consultant's Phase I Report did not indicate that the two RTNs for the site were linked. The BWSC Form submitted to MassDEP on July 12, 2002 by the prior consultant clearly linked the second RTN to the original RTN.

The LSP, in the Phase II submittal, noted that the prior consultant submitted a Phase II Conceptual Scope of Work to MassDEP on July 25, 2002. The LSP did not mention that the consultant had also submitted an IRA Plan regarding the second RTN on August 26, 2002. On page 3 of the June 18, 2004 Phase II submittal, the LSP stated the following:

> Please note that based on the review of the DEP's BWSC Site/Reportable Release Look Up searchable website, [the second RTN] was closed on July 12, 2002 (see Appendix B). It appears that [the second RTN] has been linked to [the original RTN]. However, there is no mention of this in the Phase I/Tier Classification report, nor on the BWSC Transmittal Forms. [The LSP's firm] is assuming the information on the database is correct. However, if the information is not correct, then [the LSP's firm] will perform the necessary response actions in accordance with the MCP.

In the Phase II submittal, the LSP neither identified the residents in the adjacent building as potential human receptors nor discussed vapor migration as a potential human exposure pathway to the adjacent residence even though the groundwater was located within 30 feet of the residence, less than 15 feet below ground surface, and VOCs

(tetrachloroethene and vinyl chloride) were present in groundwater at concentrations greater than the Method 1 GW-2 standard.

The LSP stated at an interview with a Complaint Review Team (CRT) from the Board held on April 5, 2007 that s/he assumed, based on the information on the MassDEP Web site, that the second RTN had been formally closed and the IRA activities were no longer required rather than that the second RTN was simply linked to the original RTN. At the interview with the CRT, the LSP also stated that s/he understood that when an RTN number is linked to another RTN for the same site, both RTNs remain open but, once linked, all documentation regarding the site would list only the original RTN. At the same interview, the LSP stated that it would be very unusual for MassDEP to have closed out an RTN in a situation where required IRA activities had not been carried out. On June 18, 2004, the same date the LSP filed the Phase II submittal, s/he also submitted a Tier II Transfer Submittal that stated that the LSP's client was assuming responsibility for response actions at the site as the new property owner. As part of the Tier II Transfer Submittal, the LSP included a BWSC Tier Classification Submittal Form. On that form, the LSP listed the second RTN for the site and indicated that s/he was linking it to the original RTN.

As detailed above, the LSP's proposals to his/her client and submittals to MassDEP indicate that s/he knew or should have known that the second RTN was still open and that the required IRA activities still needed to be addressed. On May 16, 2005, two MassDEP staff members visited Site A to meet with the LSP and his/her client. The purpose of the visit was to discuss the status of IRA activities because none of the required IRA status reports had been filed with MassDEP. One of the MassDEP staff members prepared a Release Amendment Form the same day of the site visit that stated, in relevant part: "… [The LSP] stated that [s/he] was not aware an IRA condition existed at the Site, and [s/he] was not aware the previous owner/LSP had submitted an IRA Plan to DEP in 2002 to address potential impacts to indoor air (PCE, vinyl chloride) at the nearby residence."

On April 19, 2006, MassDEP filed a complaint with the Board that alleged, among other things, that the LSP ignored, failed to notice or decided not to assess the previously-identified IRA condition and potential for indoor air contamination after taking over as the LSP-of-Record.

The Board found that it was not reasonable for the LSP to have concluded in June 2004 that MassDEP, on July 12, 2002, determined that IRA activities were no longer required and closed the second RTN. The release was first reported less than three weeks before on June 25, 2002. The prior consultant submitted a Phase I report on July 12, 2002 that linked the second RTN to the original RTN. The prior consultant stated that an IRA Plan would be filed to address the second RTN. MassDEP did not issue a Notice of Responsibility letter regarding the second RTN until August 2, 2002, and the prior consultant submitted an IRA Plan on August 25, 2002.

The Board concluded that the LSP knew or should have known that the required IRA activities regarding the second RTN were still required to be completed as of June 18, 2004 when s/he filed the Phase II submittal. The Board concluded that the LSP should also have addressed the open IRA condition in the Phase II submittal and the failure to do so violated 309 CMR 4.02(1), 4.03(3)(b), and 4.03(3)(c). The Board concluded that the LSP violated 309 CMR 4.03(3)(c) by not reviewing the documents in MassDEP's files regarding this site when s/he took over as LSP-of-Record. The Board concluded that the LSP violated 310 CMR 40.0835, as well as 309 CMR 4.02(1) and 4.03(3)(b), by failing, in the Phase II submittal, to identify the residents in the adjacent building as potential human receptors and to discuss vapor migration as a potential human exposure pathway to the adjacent residence because the groundwater was located within 30 feet of the residence, less than 15 feet below ground surface, and VOCs (tetrachloroethene and vinyl chloride) were present in groundwater at concentrations greater than the Method 1 GW-2 standard.

SITE B

The Site B property was a 16,000-square-foot parcel with a two-story commercial building. The commercial building was constructed in 1939 and has housed various retail occupants. Dry cleaning businesses had been tenants of the building since 1945. In 2003, a fire damaged the on-site building, including the dry cleaner. A new building was constructed after the fire and the old dry cleaning equipment was replaced with equipment that did not use PCE.

In November 1992, MassDEP conducted a soil gas survey on the property that detected PCE in three locations. MassDEP conducted the soil gas survey in an effort to identify the source of PCE and other VOCs that had been detected in water samples collected from a municipal well located approximately 0.7 miles southwest of the site. Use of this well was discontinued in 1979 after the contaminants (PCE and other VOCs) were detected in water samples. The town that owned the water rights to the municipal well was interested in exploring whether it could be reopened in the future.

MassDEP issued a Notice of Responsibility regarding Site B to the property owner in December 1992 based on the results of the November 1992 soil gas survey, the fact the property had been used as a dry cleaner since the 1940's, and the results of a hydrogeologic study commissioned by the town that owned the rights to the municipal well that was conducted from 1989 to 1992.

The site was classified as a Tier 1A site and granted a Tier 1A permit in January 1998. The LSP became LSP-of-Record for the site in 1999 and conducted the Phase II site assessment. On April 18, 2005, the Respondent filed a Class B-1 Response Action Outcome Statement based on a Method 3 Risk Characterization. The Risk Characterization was conducted by a risk assessor contracted by the LSP. The disposal site boundary as defined in the RAO Statement included a wide area that encompassed the Site B property, two downgradient residences, and extended to an area beyond the nearby pond. The RAO Statement included modeled indoor air results for the basements

of the two downgradient residences and the LSP concluded there was no indoor air risk at the two residences.

On March 31, 2006, MassDEP issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) stating that the RAO Statement was invalid. In addition to listing several violations of the MCP, the NOAF also stated that MassDEP was concerned, based on the modeled indoor air results for the two downgradient residences, about the potential for a Critical Exposure Pathway at both homes. MassDEP required that an Imminent Hazard Evaluation be conducted for the two residences.

On April 14, 2006, MassDEP used Suma canisters to collect samples over a four-hour period in the basements and first floors of both residences. On that same date, the LSP obtained air samples using Suma canisters from only the first floors of both residences. On June 1, 2006, MassDEP received an Imminent Hazard ("IH") Evaluation submittal prepared by the LSP. The LSP concluded in the IH Evaluation that neither an IH nor a significant risk existed from exposure to indoor air at the two residences. The LSP's IH Evaluation was based on a Method 3 Risk Characterization prepared by the same risk assessor who prepared the Method 3 risk characterization for the RAO submittal.

On November 20, 2006, MassDEP issued NONs regarding the IH Evaluation directly to the property owner, the LSP and the risk assessor. The NON addressed to the LSP stated that s/he violated 310 CMR 40.0022(2) by making inaccurate, misleading or incomplete statements in the IH Evaluation Opinion. One violation of 310 CMR 40.0022(2) noted by MassDEP was that the LSP made a misleading statement that the residents of the two downgradient homes spent only four hours per day on the first floors, thereby making the inaccurate conclusion that an IH condition did not exist at either residence. MassDEP stated that the 4-hour assumption was misleading and unsupported by site-specific factors because both residences had bedrooms on the first floors that were being used and a home office was located on the first floor of one of the homes. MassDEP also stated in the NON that this assumption also violated 310 CMR 40.0953(7) because it was not a conservative estimate of exposure, and violated 310 CMR 40.0955(2) and 40.0992(1) because the assumption did not accord with published MassDEP guidance documents that indicated 16 to 24 hours per day as the appropriate indoor air exposure duration for a resident.

Another violation of 310 CMR 40.0022(2) noted by MassDEP in the NON was that the Respondent made an incomplete statement in the IH Evaluation regarding the available indoor air data by failing to present and use the air sampling data obtained by MassDEP in the basements of both residences. The air samples obtained by MassDEP in the basements of the two homes on April 14, 2006 measured PCE concentrations of 6.04 and 16.4 $\mu g/m^3$, respectively. Neither value was used in the "Sample Collection and Analysis" section or the "Risk Characterization" section of the IH Evaluation Report. However, the MassDEP basement air sampling data was mentioned in the "Background" section of the IH Report and, therefore, the Respondent was or should have been aware of its existence when the IH Evaluation was submitted. Moreover, the risk assessor

presented the full MassDEP set of indoor air sampling data in a letter to the residents of one of the homes dated May 26, 2006, prior to the submittal of the IH Evaluation report to MassDEP. MassDEP stated in the NON that the omission of the MassDEP basement air sampling data was all the more egregious considering that MassDEP's actual data were replaced in the IH Evaluation with modeled data that were orders of magnitude lower in concentration (0.098 and 0.075 $\mu g/m^3$ in the basements of both residences, respectively).

MassDEP stated that the failure to use MassDEP's basement data and to instead rely on modeled data that were orders of magnitude lower also violated 310 CMR 40.0953(7) because the modeled data were not a conservative estimate of exposure. The modeled basement data were also two orders of magnitude lower than the actual data from the first floors collected by both MassDEP and the LSP. The actual indoor air values for the first floors were as follows:

Residence No. 1 PCE ($\mu g/m^3$)			Residence No. 2 PCE ($\mu g/m^3$)		
MassDEP	1st Floor	4.75	MassDEP	1st Floor	7.60
LSP	1st Floor	4.33	LSP	1st Floor	7.10

At the interview with the CRT, the LSP stated that s/he relied upon the risk assessor's judgment regarding the assumption that the residents spent only four hours per day on the first floors of their homes and that it was reasonable to rely upon the modeled basement data.

The Board concluded that the LSP's assumption that the residents spent only four hours per day on the first floors of their homes did not make sense considering the site-specific factors and was not sufficiently conservative. The Board concluded that the LSP should not have relied on the modeled basement data because not only were they orders of magnitude lower than MassDEP's actual data but also because they were two orders of magnitude lower than the actual data from the first floors collected by both MassDEP and the LSP. The Board concluded that the LSP knew or should have known that the modeled basement values were not reasonable considering both MassDEP's actual basement data and the much higher values collected from the first floors of the residences. Concentrations of contaminants that volatilize from groundwater into indoor air would be expected to be higher in the basement of a building compared to the upper floors not vice versa. The Board concluded that, by assuming that the residents spent four hours per day on the first floors of the residences and by relying on modeled basement air sampling data that were significantly lower than the actual data from the basements and first floors, the LSP violated the following rules of Professional Conduct: 309 CMR 4.02(1), 4.02(3), 4.03(3)(a), 4.03(3)(b), and 4.03(3)(d).

SITE C

The Site C property was an unpaved plot when the LSP became LSP-of-Record in 2003. The Site C plot was originally part of a larger piece of land that was subdivided in 1996. In January 1987, a release of oil and hazardous materials found on the larger plot was reported to MassDEP. The release was related to solid and liquid asphalt products,

underground storage tanks, and contaminated "fill" materials (i.e., ash, cinders, etc.), formerly used on the property when it was operated as an asphalt batch storage facility. Remedial actions were carried out on the larger plot between 1989 and 1998. A Waiver Completion Statement (WSC) for the larger plot was filed with MassDEP in 1998. One of the conditions of the WCS to sustain a condition of No Significant Risk was that the entire plot be paved. While the eastern portion of the larger plot was redeveloped and covered with buildings or pavement, the western portion that comprised the Site C parcel was never paved and residual contamination remained exposed.

A buyer purchased the parcel in May 2003 and engaged the LSP. Prior owners had left contaminated soil exposed on the Site C parcel in violation of the conditions of the WCS. The LSP believed that the available analytical and field data regarding the parcel indicated that a 120-day reportable condition for soil contamination existed there. The LSP submitted a Release Notification Form regarding the parcel to MassDEP in June 2003. MassDEP issued a new Release Tracking Number.

In July 2003, the Respondent filed a Release Abatement Measure ("RAM") Plan for the parcel that stated it was to be redeveloped as a paved vehicle parking lot and might also include construction of a vehicle maintenance garage. The RAM plan stated that the entire site would be paved and any contaminated soil moved during utility construction would be reused on site prior to paving. In accordance with the RAM Plan, the entire site was paved and an Activity and Use Limitation was implemented to ensure the site would remain paved in the future.

On June 24, 2004, the LSP filed a Class A-3 Response Action Outcome Statement for the parcel. The RAO Statement was based upon a Method 3 Risk Characterization prepared by a risk assessor. On December 20, 2005, MassDEP issued a Notice of Audit Findings ("NOAF") regarding the RAO submittal. MassDEP concluded in the NOAF that the RAO submittal did not demonstrate that a condition on No Significant Risk existed at the site due to problems with the Method 3 Risk Characterization including that some of the hazard index values cited in the Risk Characterization exceeded permissible risk limits established at 310 CMR 40.0993(6). MassDEP also cited in the NOAF that the risk characterization information was not clearly presented such as the breakdown of VPH and EPH data, describing the human environmental receptors and exposure pathways for each receptor, and presenting the cancer and non-cancer risks for each receptor.

At the interview with the CRT, the LSP stated that s/he discussed the data for the site with the risk assessor before s/he submitted the RAO, but did not discuss the assumptions relied upon by the risk assessor. S/he also stated at the interview that s/he did not review the Method 3 Risk Characterization before filing the RAO submittal.

The Board found that the problems with the Method 3 Risk Characterization (such as the fact that some of the calculated hazard indices were above the limits allowed by the MCP and, therefore, the LSP's conclusion that No Significant Risk existed on the site was not supported) should have been recognized by the LSP. The Board found that the

LSP violated several of the Board's Rules of Professional Conduct (309 CMR 4.02 (1), 309 CMR 4.02(3), 309 CMR 4.03(a), 309 CMR 4.03(3)(b)) by failing to review the Method 3 Risk Characterization upon which his/her RAO opinion was based before filing the RAO submittal.

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LSP Board Complaint No. 06C-01

VOLUNTARY SURRENDER OF LICENSE

On July 26, 2010, pursuant to an Administrative Consent Order (ACO), the LSP did not admit to any violation of law or regulation but agreed to voluntarily surrender his/her LSP license and not reapply for a license for a period of three-and-one-half years. The Board and the LSP entered into the ACO before the Board had completed an investigation of a disciplinary complaint filed against the LSP.

In January 2006, the Massachusetts Department of Environmental Protection (MassDEP) filed a complaint with the Board alleging, among other things, that the LSP inadequately investigated whether petroleum that had leaked from underground tanks at a former gas station site had migrated to nearby residential properties. The Board was investigating the allegations in the complaint when the LSP and the Board entered into the ACO.

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LSP Board Complaint No. 05C-07

LICENSE SUSPENSION

On February 8, 2019, after an adjudicatory hearing, the Board issued a final order suspending the LSP's license for a license one year and requiring the LSP to complete thirty-two hours of continuing education. The LSP appealed the Board's final order to Superior Court. After the Superior Court upheld the Board's order, the LSP appealed to the Appeals Court. After the Appeals Court upheld the Board's order, the LSP sought further appellate review to the Supreme Judicial Court. The Supreme Judicial Court denied further appellate review on January 16, 2025. Throughout the duration of the LSP's appeals, the discipline against the LSP was stayed. On January 22, 2025, the Board issued a letter notifying the LSP that the discipline in its 2019 final order was being imposed. The LSP's one-year suspension went into effect on February 21, 2025.

This disciplinary action resulted from a complaint filed by a private party. On January 8, 2010, the Board voted to commence formal disciplinary proceedings against the LSP. In the Order to Show Cause served on the LSP, the Board described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds to discipline the LSP.

The LSP appealed the Board's initial decision. The adjudicatory hearing was conducted by a Hearing Officer at MassDEP's Office of Administrative Appeals and Dispute Resolution and focused on the LSP's work at two sites. The Hearing Officer's recommended decision concluded that the Board had proven sufficient facts existed to discipline the LSP. The Board, accepting the findings in the recommended decision, issued final findings of fact and rulings of law in October 2009 that concluded that sufficient facts did exist to discipline the LSP in regard to the LSP's work at the seven

sites. The Board also concluded that the LSP had violated the following Rules of Professional Conduct:

> 309 CMR 4.02(1) which requires an LSP to act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing at the time the services are performed; and
>
> 309 CMR 4.03(3)(b) which requires LSPs to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and the regulations in the Massachusetts Contingency Plan.

Summary of Factual Findings

In its final findings of facts and rulings of law, the Board made the following determinations regarding the LSP's work at the two sites.

Site A

Site A, the subject of the Complaint, was a gas station and auto repair business with three gasoline tanks located under a concrete pump island pad and a diesel tank located under a concrete pad. A two bedroom apartment was located on the second floor of the on-site building. The Site was served by a private well, although the LSP reported that it was not being used for drinking. The abutting residences, including the residence directly across Main Street, the street from the site, also had private drinking water wells. Because the boundary of an Interim Wellhead Protection Area for a public drinking water supply well intersected the Site property, the Site was classified as GW-1. A stream and associated wetlands were located south of the site.

The LSP's work at the site began in January 2003, after the former owner's consultant found non-aqueous phase liquid (NAPL) identified as diesel fuel in a monitoring well located between the gas station pump island and the street. The LSP notified MassDEP of the diesel fuel release and proposed an Immediate Response Action (IRA) to install a large recovery well, sample private wells, inspect the storm drains, and test the underground storage tanks (USTs or tanks). MassDEP orally approved "inspect stormwater system for potential impacts," as well as sampling of private wells, air monitoring, and tank testing. The tanks passed tightness tests performed in January 2003. A subsequent test revealed that the remote fill line for the diesel tank was broken and leaked fuel when deliveries were made.

MassDEP issued a Notice of Responsibility (NOR) dated February 12, 2003 (for RTN #1) that required submittal of an IRA Plan to include, among other tasks, an active remediation system, and increased monitoring of private wells, indoor air, and the storm drain system located within the roadway in front of the site. The LSP's written IRA Plan dated March 2003 proposed to evacuate NAPL from the monitoring well, and if NAPL returned, to install a 12-inch recovery well and a trench in which an active NAPL recovery system would be based, sample private wells, inspect and screen the storm drain system with a PID meter, and monitor indoor air.

The LSP performed the NAPL evacuation in April 2003. Although the NAPL returned within a few days, the LSP did not install the 12-inch recovery well as proposed, but instead continued to hand bail NAPL from the affected well (a 1-inch micro well). In a subsequent IRA Status Report, the LSP stated "it does not appear productive or cost effective to install a recovery well to collect NAPL from the low yielding silt and clay stratas." The LSP also added that overhead utility lines hindered installation of a recovery well.

On May 16, 2003, five months after the discovery of NAPL, the LSP discovered a sheen on the nearby brook. The LSP notified Town officials and MassDEP, and with the assistance of Fire Department personnel, traced the sheen upstream to the outfall of the storm water drainpipe that passes in front of the Site. The LSP, MassDEP, the Fire Department, and Department of Public Works inspected catch basins and manholes within the street adjacent to the site both upgradient and downgradient. According to the MassDEP Release Log Attachment, the upgradient catch basin was clean, but the one next to the gas station had diesel fuel odor and a sheen.

MassDEP assigned a new RTN (#2) and issued a Field NOR to the gas station owner requiring active collection of NAPL from the impacted on-site monitoring well and remedial measures "necessary to stop the diesel fuel discharge to the storm drain."

In July 2003, the LSP submitted the first of several IRA Status Reports for the initial discovery of NAPL (RTN #1) in the monitoring well in which s/he described response actions undertaken including the above-mentioned NAPL evacuation. Although the two RTNs had not been linked, the LSP discussed the release of petroleum to the brook and stated: "water emanating from the outfall appeared to be impacted from either diesel fuel or home heating oil." The total concentration of the EPH fractions in each of three surface water samples from the outfall exceeded 3,000,000 µg/L. Both diesel and non-diesel PAHs were also reported in the samples. These data were presented in a summary table in the Status Report, but were not discussed in the text of the report. The LSP's Status Report concluded, "The clear priority for response is the recently identified condition to the brook. Although [gas station] has taken preliminary responsibility for providing immediate protection to the wetland resource, it is clear from the recent investigations that the diesel fuel delivery line has not caused the impact to the stormwater system."

DEP issued a Notice of Noncompliance (NON) on 11/26/03 for failure to submit a Release Notification Form (RNF) or an IRA Plan for the release to the brook. The LSP's subsequent IRA Plan for the surface water release, dated January 21, 2004, stated: "it is apparent that the outfall area has been impacted with oil that is generated from stormwater surface flows" at the gas station. The IRA Plan proposed reconstruction of the gas station concrete pad to include grooves to contain spills, installation of an overhead canopy and an oil/water separator, and coordination with the Town on cleaning the storm drain system.

After receipt of the IRA Plan, MassDEP representatives visited the Site on March 11, 2004 and noted in their Release Log "gross contamination of wetlands, banks of brook, and surface water at outfall." MassDEP determined that the LSP's proposed response actions were not sufficient to prevent additional impacts to the brook and, on April 5, 2004, issued a Request for IRA Plan Modification to mitigate the Substantial Release Migration (SRM) condition affecting the surface water. MassDEP stated that the IRA Plan did not adequately address the SRM condition affecting surface water and "does not provide sufficient information to support the assertion that the impact to the [brook] was caused solely by surface water runoff from the gasoline station and not contributed to by an ongoing subsurface release at the site." MassDEP required several response actions in the IRA Plan Modification, including: a plan and schedule to mitigate the condition of SRM (monitoring the brook and the absorbent booms), an Imminent Hazard Evaluation, a plan to "determine all sources of oil contamination impacting the catch basins and storm drainage system (e.g., through groundwater infiltration, surface water runoff, and/or other routes.)"

The LSP's IRA Plan Modification submittal dated April 21, 2004, restated MassDEP's requirements and included, among other things, a forensic geochemistry assessment of water, sediment, and soil data; future development of remedial plans to eliminate stormwater

contamination of the brook; and video inspection of the stormwater system. Most of these tasks were never undertaken.

In June 2004, the LSP conducted the first groundwater sampling since June 2003, and NAPL was identified in the most upstream of the monitoring wells the LSP had installed along the stormwater pipe. Based upon this discovery and the continued presence of NAPL in the original monitoring well, the LSP's June 2004 IRA Status Report proposed a modification to the IRA Plan to "accelerate the recovery of NAPL in a rapid, safe and comprehensive manner." The LSP proposed to install a 50-foot interceptor trench in the street immediately adjacent to the storm pipe, with a passive NAPL skimmer placed in a 12-inch recovery well at the center of the trench, which would be fed by two wings of panel piping. The 4-inch skimmer could collect ½ gallon of product to be manually emptied three times a week. The LSP stated that if the passive skimmer could not handle NAPL recovery after one month of monitoring, an active recovery system would be installed.

On July 1, 2004, MassDEP sent an e-mail to the LSP denying the IRA Plan Modification. MassDEP's reasons included: insufficient documentation to support the efficacy of the proposed system or to demonstrate that the one-half gallon passive collection system would recover sufficient NAPL; the proposed trench did not include an impervious barrier on the downgradient sidewall; and passive NAPL bailing at the site had not controlled migration. MassDEP noted that the LSP's initial IRA Plan proposed an active NAPL recovery system, that an active system was required in the field NOR issued on May 16, 2003, and that an active system had yet to be implemented. A formal denial letter with interim deadlines was subsequently sent to the gas station owner with a request for another IRA Plan Modification to provide active NAPL and groundwater recovery and treatment to control and mitigate the condition of Substantial Release Migration at the site.

On November 5, 2004, the LSP submitted an IRA Status Report and IRA Plan Modification. The LSP reported "[t]he results continue to show that the diesel release is not migrating along a preferential pathway outside the 15-inch reinforced concrete stormwater drainpipe" or across Main Street toward the private home. The LSP also reported that s/he had installed additional wells in the roadway and installed a 4-inch passive NAPL recovery canister in one of the 4-inch wells. Hand bailing of NAPL had resumed on October 7th after having stopped in May.

In this November 2004 Status Report, the LSP included another IRA Plan Modification, to respond to MassDEP's July 2004 denial of the previous Modification. The LSP expressed concern that passive recovery of NAPL alone might not be sufficient to address the "probable" migration of NAPL and dissolved constituents beneath Main Street toward the private wells across the street from the site. The LSP proposed a groundwater treatment system that would pump groundwater from either one of two of the 4-inch wells "at a rate sufficient enough to pull NAPL and dissolved diesel constituents back to" the site property. A pump test was proposed to determine which well was suitable for the recovery pump. It was proposed that the other well would be fitted with a passive skimmer. Groundwater would be pumped to a holding tank where NAPL would be allowed to separate and be skimmed off. The remaining groundwater would be treated and discharged to infiltration galleries. The LSP also proposed that once NAPL was adequately removed, a chemical oxidant would be introduced to the subsurface.

On November 26, 2004, MassDEP denied this IRA Plan Modification on the ground that it lacked sufficient technical justification to support the viability or efficacy of the proposed treatment system. The Department also cited the fact that the nine requirements outlined in their previous denial letter had not been addressed and that because a condition of SRM existed they had

previously required an active NAPL recovery system that had yet to be implemented. Also, the LSP's proposal to inject oxidants was in direct violation of section 40.0036(3) of the MCP, and installing passive skimmers in wells at the site, was an unapproved IRA, also in violation of the MCP.

The LSP's next IRA Plan Modification submitted on January 7, 2005, addressed the ten reasons for the denial of the previous plan by MassDEP. Included in the document were an IH Evaluation, a CEP and SRM evaluation, a summary of an additional boring program to further delineate the extent of NAPL, a plan to mitigate impacts to the wetland, and a plan to conduct quarterly groundwater sampling. Also included was a summary of the construction of the interceptor trench in December 2004. In discussing the mitigation of the wetland, the LSP continued to opine that petroleum impacts to the brook were caused by surface runoff from the gas station entering the catch basin. To mitigate impacts to the wetland, the LSP proposed the installation of catch basin inserts, a trench filter at the stormwater pipe outlet, and a sandbag dike at the banks of the brook.

The LSP also discussed the possibility of groundwater infiltration into the drainpipe in an IRA Plan Modification dated July 8, 2005. The LSP stated that the cross section submitted in January 2005 showed that, based on the groundwater elevations measured in June 2003, a nine inch rise in elevation would likely result in the migration of petroleum constituents into the storm drain system. However, the LSP never determined whether this had actually happened based on site groundwater elevation data. Based on the public record and information from the LSP, s/he was terminated shortly after submitting this July 2005 document by the gas station owner who then hired a new company and LSP.

On April 19, 2007, MassDEP issued an Administrative Consent Order with Penalty (ACOP) to the gas station owner for failure to perform response actions in a timely manner. The ACOP cited, in addition to missed deadlines after the LSP's involvement, the various NONs and requests for IRA Plan Modifications issued during the LSP's tenure, particularly related to the inaction regarding the SRM and CEP and the Department's continuing requests for an active NAPL recovery system.

The Board concluded that the LSP did not perform sufficient assessment activities either to rule out a connection between the diesel release and the outfall contamination or to substantiate the LSP's contrary theory that the outfall release was caused by surface runoff and dislodging of petroleum adhered to the interior of the storm drainpipe. The CRT believes that the LSP failed to conduct IRA assessment actions that were commensurate with the type and amount of oil or hazardous material released, the site complexity, and the sensitivity of the site and surrounding private wells, the stream, and adjacent wetlands, violating 310 CMR 40.0414. The LSP's resistance to MassDEP's IRA requirements of active NAPL recovery, and the placement of passive skimmers without MassDEP's approval, violated 310 CMR 40.0420(2), (6), and (11).

The CRT also believes that the LSP lacked support for his/her resistance to MassDEP's IRA requirements, particularly the requirement to implement an active NAPL recovery system. Failure to comply with IRA requirements deemed necessary by MassDEP and specified in its approval of IRA Plans violates 310 CMR 40.0420(2), (11). MassDEP initially requested an active recovery system in February 2003. The LSP believed that dense soils at this site made active recovery infeasible. Only after MassDEP denied the LSP's IRA Plans three times did the LSP propose to pump groundwater and NAPL to a separation tank, rather than collect NAPL manually from passive skimmers.

In addition, by installing passive skimmers without MassDEP's approval, the LSP violated 310 CMR 40.0420(6) (2003), requiring prior approval for IRA actions. The LSP also did not submit an Imminent Hazard Evaluation to MassDEP until December 2004 (a requirement of MCP Section 40.0426), which was 24 months after the discovery of the NAPL release, 18 months after the discovery of the release of petroleum to the brook, and seven months after MassDEP requested it.

Site B

Site B was occupied by a gas station that dated back to 1935 and auto repair facility. A petroleum release was first reported to MassDEP on June 11, 1997, during the removal of a 2,000-gallon gasoline UST. On October 24, 1997, a second release was discovered during the removal of two additional USTs. Another LSP, not the LSP that was the subject of this disciplinary case, performed IRA activities and submitted a Phase I report in 1997. The Phase I report stated that gasoline-impacted groundwater was present at the site at concentrations greater than applicable Reportable Concentrations; that soil samples collected from the tank grave "exhibited low-level impact by gasoline, exceeding applicable Method 1 Risk Characterization standards"; and further subsurface investigation was needed to evaluate the horizontal and vertical extent of contamination.

No more response actions were undertaken at the site until May 2002 when the site owner retained the LSP who is the subject of this complaint. After a series of field tasks, the LSP submitted an RAO to MassDEP on June 18, 2002. On May 8, 2002, the LSP advanced 11 micro borings at the site with four completed as monitoring wells and two as soil gas probes. The four wells were installed almost in a straight line along the western side of the site. The soil gas probes were installed near the gas station building. The LSP determined that groundwater was flowing in a northwesterly direction across the site based on depth to groundwater measurements taken on May 10, 2002. S/he stated that local groundwater flow direction would likely be influenced by surface and subsurface structures and utilities adjacent to the site.

Soil samples from four borings were submitted for VPH analysis. The LSP also collected groundwater samples from the four new wells and one existing well on May 10, 2002 and analyzed them for VPH. The LSP did not collect groundwater samples from the other three existing wells nor did s/he measure depth to groundwater in the existing wells.

On June 4, 2002, the LSP collected a second round of groundwater samples from the same five wells for VPH analysis. In several instances the second round analytical results were 2 to 3 times greater than the first round results. S/he also collected soil gas samples from the two soil gas probes and had them analyzed for APH. Using these two rounds of groundwater data, the soil data from both his/her borings and the prior consultant's borings, and the soil gas data, the LSP submitted a Class A-3 RAO. The RAO conclusions were based on the results of a combined Method 1 and Method 2 Risk Characterization. The LSP stated that s/he used the Method 2 to modify Method 1 standards because several contaminants were reported present in groundwater at concentrations exceeding applicable Method 1 GW-2 and GW-3 standards. For soil, the LSP concluded that EPCs were less than applicable Method 1 standards, although s/he also placed an AUL on the property to limit potential future exposure.

On November 6, 2003, MassDEP issued a Notice of Audit Finding (NOAF) and Notice of Noncompliance (NON) after its review of the RAO. MassDEP concluded that a condition of No Significant Risk had not been achieved to support the Class A RAO. Specifically, MassDEP concluded that the groundwater data provided in the RAO Report did not demonstrate that the

source of the release had been adequately controlled and/or eliminated, or that the extent of contamination had been adequately defined. MassDEP cited the fact that the two rounds of groundwater samples were collected within four weeks and that the second round results showed significant increases in concentrations indicating that the source might not have been eliminated or controlled. MassDEP also noted that the groundwater data did not provide sufficient information about seasonal fluctuations of the groundwater table.

Relative to the risk characterization, MassDEP noted that the calculated EPCs did not represent conservative estimates of exposure because the higher concentrations in the second round of sampling were averaged down. MassDEP also noted that because of the upward trend of the groundwater contaminant concentrations, the site-specific Method 2 Standards were inadequate to rule out future vapor migration into buildings or discharge to surface water. MassDEP noted several violations of the MCP including the following:

·310 CMR 40.1003(5) – Asserting a Class A RAO without eliminating or controlling sources;

·310 CMR 40.0904(2) – Failure to adequately define the horizontal and vertical extent and concentrations of oil and/or hazardous materials in all evaluated media;

·310 CMR 40.0926(3)(b)(1) – Failure to identify Exposure Point Concentrations (EPCs) that are conservative estimates of concentrations contacted by a receptor at the Exposure Point;

·310 CMR 40.0973(7) – Failure to achieve a level of No Significant Risk.

The Board concurred with MassDEP's conclusions regarding the RAO submittal.

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LSP Board Complaint No. 05C-06

LICENSE SUSPENSION

On May 27, 2008, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her LSP license for a period of one year. The Board and the LSP entered into the ACO before the Board had completed an investigation of a disciplinary complaint filed against the LSP.

In December 2005, a former client filed a complaint with the Board alleging that the LSP had filed a report with MassDEP stating that no significant risk existed at a site when available analytical data indicated that lead remained in soil at concentrations above applicable standards. The complaint included the results of a MassDEP audit that determined risk was still present at the site due to the concentrations of lead in soil. MassDEP required additional work be performed at the property. The Board was investigating these allegations when the LSP and the Board entered into the ACO.

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LSP Board Complaint No. 05C-01

PUBLIC CENSURE

On May 11, 2006, pursuant to an Administrative Consent Order ("ACO"), the Board issued a Public Censure to an LSP for violations of the Board's Rules of Professional Conduct. Prior to entering into the ACO, the Board had filed an Order To Show Cause setting forth the grounds for discipline that had been identified during the Board's investigation. By entering into the ACO, the LSP did not admit to any wrongdoing but agreed not to contest the Board's investigatory findings and accepted a Public Censure.

This disciplinary action resulted from a complaint filed by a private party that alleged the LSP had insufficient bases for filing two related LSP Opinions that concluded that a large, above-ground storage tank ("AST") containing Jet A fuel had **not** suffered a "significant leak." The Board's decision to seek disciplinary action against the LSP was based on its determination, after an investigation by a Complaint Review Team, that the LSP did not have sufficient bases to rule out a significant leak at the AST in question. The Board also found that the absence of a "significant" release was not a relevant concept for purposes of filing an RAO, that the LSP had failed to disclose and explain in his/her Opinions data that may have tended to support or lead to a contrary or significantly different Opinion, and that the LSP had not acted with reasonable care and diligence in investigating whether the tank had leaked. As a result, the Board concluded that the LSP had violated the following Board Rules of Professional Conduct:

> 309 CMR 4.03(3)(b), which requires that an LSP follow the requirements and procedures set forth in applicable provisions of MGL c. 21E and 310 CMR 40.0000;
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> 309 CMR 4.03(3(d), which requires that an LSP disclose and explain in his/her Opinions the material facts, data, and other information known by him/her that may tend to support or lead to an Opinion contrary to, or significantly different from, the one expressed; and
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> 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing.

Background of Case

The complaint arose out of the LSP's work in 2002-2003 at a fuel terminal that contained, among other tanks, some large ASTs containing Jet A. In 2002, the former owner of the terminal was conducting separate-phase hydrocarbon ("SPH") recovery at the terminal when it reported an increasing trend of SPH recovery adjacent to one of the large Jet A ASTs. This particular tank was 40' high and 100' in diameter and had a capacity of 2.4 million gallons. The former owner also claimed that the SPH thickness in the vicinity of this tank had increased by a number of feet. Although the current owner claimed it had not noted any loss of product from this AST, these reports prompted the current owner to conduct a chemical tracer tightness test. When the tank failed the test, the current owner notified MassDEP, which approved an IRA that included (a) draining and assessing the tank to attempt to identify the source of a release and (b) conducting

release-related assessment activities including an evaluation of whether product had reached underground utilities, drainage, or sewer lines. The LSP worked for the firm retained by the current owner in the fall of 2002 to oversee the IRA activities.

Shortly thereafter, the LSP's firm investigated the area around the tank and found SPH on several areas of standing rainwater about 100' east of the tank. MassDEP assigned this condition a separate RTN, categorizing it as a Condition of Substantial Release Migration ("SRM"). Both the current owner and the former owner were designated as PRPs for this RTN.

The LSP's firm collected samples of the SPH from one of the puddles and from water found inside a manhole located a few hundred yards to the south. The LSP forwarded these samples to a lab for forensic analysis. The lab reported that both samples contained kerosene-range petroleum similar to Jet A, that both samples likely shared a common source, and that the samples may be a mixture of unweathered and severely weathered products. The Board's Complaint Review Team noted that such a mixture is the kind of mixture that could result if the suspect tank had leaked fresh Jet A into the older, pre-existing plume of Jet A SPH that the former owner had been remediating. This forensic report was subsequently submitted to MassDEP as part of an IRA Plan for the SRM.

In September 2002, after the tank was drained, a corrosion-testing firm entered the empty tank and, using a vacuum box, discovered minute cracks in the welded joints around the sump at the bottom of the tank. The location of these cracks correlated to the general area implicated during the leak detection test performed earlier.

In November 2002, the Respondent LSP signed and submitted an IRA Plan for the tank-related RTN *"in response to a release of Jet A fuel from an aboveground tank (AST)."* The submittal described the previous tracer gas and vacuum box testing of the tank and noted that *"the results indicate a likely leak near the center of the tank, probably associated with cracks in the sump perimeter welds."* IRA activities proposed for the future included repair of the tank and the continued monitoring of SPH thicknesses and recovery rates in the vicinity of the tank.

Later that month, a work crew entered the tank and removed the sump from the floor of the tank, leaving a 4½' x 4½' square hole exposing the underlying sand. The Respondent LSP was present. S/he felt the sand and noted in a field log that the sand was "mostly dry," with "no obvious petroleum saturation," although it had an "odor of petroleum."

At the interview with the CRT, the Respondent LSP confirmed that s/he personally collected two samples of the sump pit sand and forwarded them to a lab for forensic analysis. Describing the sand in the pit, s/he said it was construction-grade sand. S/he said s/he observed no residual product in the sand. S/he also said that s/he felt some of the sand in the pit with his/her hands, and the sand did not have the oily feeling that, in his/her opinion, petroleum-contaminated soil would typically have. It did have a

petroleum odor, s/he said. S/he also said that although s/he did not express this in submittals to MassDEP, his/her visual observations of a lack of staining in the sand and its lack of an oily texture became an important factor, or "line of evidence," s/he relied upon in concluding later that the tank had not leaked significantly.

In December 2002, the LSP received the lab's forensic report regarding the sump sand samples. This report, which runs over 60 pages, contains results from a variety of analyses including, among others, a table of "Source and Weathering Ratios" and GC/FID fingerprints. The only discussion of the results contained in the report compared the sump samples to the earlier SPH samples taken from the nearby puddle and manhole. The report stated that all three samples "contained kerosene-range petroleum similar to the included Jet A reference standard." About the sump sample itself, the only statement made in the report's discussion is as follows:

> *Although [sump sample] also contained material consistent with Jet A or similar products, the diagnostic ratios, ion signatures, FID fingerprints, and relative weathering suggest that this sample contains material from a source separate from [the other two samples]. However, the significance of these differences could not be determined with only three samples.*

The Respondent LSP informed the CRT that s/he sought no assistance in reviewing this forensic report. S/he said that s/he did not understand how to interpret the table of "Source and Weathering Ratios," nor did s/he understand how to interpret the GC/FID fingerprints attached to report. S/he said s/he had simply reviewed the report's brief discussion, noted above, and concluded from it that the sump sand contained fresh Jet A along with weathered Jet A. Based on this information, and the lack of an oily feeling when s/he felt the sump sand, the LSP reasoned that the sump sand had likely become contaminated with the underlying historical SPH being remediated by the former owner.

The CRT requested that laboratory staff at MassDEP's Wall Experiment Station ("WES") examine the forensic report regarding the sump sample. Upon doing so, the WES staff concluded that, based on the information contained in this report, the sump sample contained fresh, unweathered Jet A indicative of recent leakage from the tank.

This forensic report of the sump sand sample was not mentioned in or attached to any of the Respondent LSP's subsequent MCP submissions concerning any of the RTNs associated with the terminal. When asked why this report was not disclosed and explained in any report to MassDEP, the LSP told the CRT that "the forensic data were not definitive and did not materially influence my opinion in any way."

After the sump was removed, a new one was installed and the tank was returned to service.

In January 2003, the Respondent LSP signed and submitted an IRA Status Report for the RTN associated with the tank condition. While LSP's Nov. 2002 IRA Plan had

repeatedly referred to the condition there as a "release," this Status Report referred only to *"a purported release of Jet A"* from the tank. It described the previous tightness tests at the tank as well as the sump removal and inspection of the soil underneath, but it did not mention the sump sample or any other analytical results. It also reported that LSP's firm had inspected the product recovery records provided by the former owner and *"found that the increasing trend in SPH recovery rates actually correlated with the transfer of the [former owner's] Spill Buster recovery system between SPH recovery wells within the Tank 67 containment areas."* The report provided no further explanation or data to support this finding. Based on this finding and the results of the previous tests and inspections at Tank 67, this Status Report concluded as follows: *"[W]e believe that the SPH recovery increase noted by [former owner] is unrelated to the [current owner's] operation of [the tank]."*

At the interview with the CRT, the Respondent LSP was asked to explain how, given that a Spill Buster product recovery system is designed to pump only product and not water, the presence of a Spill Buster system in a recovery well near the suspect tank, or its transfer from one recovery well to another, would increase SPH thickness in the vicinity of the tank. The LSP could not explain this. S/he said s/he was not very familiar with the Spill Buster system, but knew it was a system that was designed not to pump water.

In February 2003, a month after submitting this IRA Status Report, the LSP signed an Opinion for a Release Notification Retraction for the release associated with the SRM, concluding that the SRM derived from older releases for which the former owner was responsible. In July 2003, the LSP signed an Opinion for a Class A-1 RAO for the RTN related to the tank itself. The LSP's stated bases for concluding that an RAO had been achieved were that the threat of release associated with the tank had been eliminated by the repairs to the tank and *"a significant release of Jet A fuel from [the tank] did not occur."*

In the Release Notification Retraction, the LSP offered the following lines of evidence for concluding that the SRM was part of the SPH remaining from historical releases for which the former owner was responsible and was not a new release from the suspect tank. The LSP relied on these lines of evidence to support the RAO as well.

- The terminal staff observed no product loss from the tank when they stilled the tank.
- No inventory losses were detected during the period from April 2002 through August 2002, when the former owner was reporting an increase in the SPH recovery rate.
- No product appeared in the diked area surrounding the tank, especially after rain events.
- The increasing trend in SPH recovery rates reported by the prior owner corresponded with the transfer of its Spill Buster system between recovery wells within the tank containment area.
- Regarding the tracer tightness test, the tracer compound was detected in only one of the eight subsurface probes, and then at a concentration only slightly

exceeding the passing level, indicating a very small amount of tracer gas was exiting the tank bottom.

- The failed vacuum box test was not an indication that product actually was released from the tank because (a) no product staining was observed in the area of the welds, as would be expected if there had been a leak there; (b) the soil beneath the sump was dry and no visual evidence of SPH was observed in the soil; and (c) although the sump soil emitted a petroleum odor, this was attributed to the historical SPH on the groundwater beneath and around the suspect tank.

The Board's Conclusions and Findings of Noncompliance

Based on the CRT's report, the Board found that the Respondent LSP signed the Release Notification Retraction and the Class A-1 RAO without having sufficient bases under the MCP to support either of these Opinions. None of the lines of evidence cited by the Respondent LSP were sufficient, either separately or taken together, to demonstrate to the degree required by the MCP that the tank had not leaked or even that a *"significant release of Jet A fuel from Tank 67 did not occur,"* if "significant" is defined to mean any amount equal to or greater than the RQ for jet fuel (10 gallons). Each of these lines of evidence failed to meet one or more of the following MCP requirements:

(a) The MCP's Response Action Performance Standard ("RAPS") at 310 CMR 40.0191(2), which requires investigative practices to be "scientifically defensible." For example, it was not scientifically defensible to assert that the results of the failed tracer test and the failed vacuum box test established that the tank had not leaked or even that it had not leaked more than 10 gallons. The report of the vacuum box tester indicated that it believed it had discovered a "leak."

(b) The requirement in 310 CMR 40.0190(2) and 40.0017 that data or information used in support of LSP Opinions have a level of precision and accuracy commensurate with the intended use of the results of such investigations. For example, with respect to the tank gauging results conducted by the current owner's employees, the LSP had not seen any tank gauging data that may have been collected and s/he did not know what method the current owner had used to gauge the tank, what degree of precision that method had, or whether the current owner's measurements took into account temperature variations over the three-day measurement period.

(c) The RAPS requirement in 310 CMR 40.0190(1) that one must exercise "the level of diligence reasonably necessary to obtain the quantity and quality of information adequate to assess a site." For example, the line of evidence concerning the observation that no product appeared in the diked area surrounding Tank 67, especially after rain events, was based on the LSP's conclusion that a confining layer of Boston Blue clay existed just below the tank bottom. The LSP explained to the CRT that this conclusion was based on examination of soil data from boring B-51, located east of the tank inside the diked area. However, the existing MassDEP file for this site includes a

detailed "Hydrogeologic Evaluation Report" from 1988 that reported, based on numerous borings, that the clay layers in this area *"generally occur as discontinuous features."* Attached to this report were hydrogeologic cross sections of the soil showing no shallow clay layers on two other sides of the tank.

The Board also found that by failing to mention or submit to MassDEP the forensic report for the sump sample, the LSP violated MCP § 40.0015, which requires an LSP when rendering an Opinion to disclose and explain in the Opinion the material facts, data, other information, and qualifications and limitations known by him or her that may tend to support or lead to an LSP Opinion contrary to, or significantly different from, the one expressed.

The Board also found that pursuant to the MCP, the absence of a "significant release" is not a relevant concept for purposes of filing an RAO. Section 40.1036(1) of the MCP specifies that a release or threat of release can be resolved with a Class A-1 RAO only when either (a) it can be demonstrated that "no release" to the environment has occurred or (b), where a release to the environment has occurred, a Permanent Solution has been achieved and the level of oil and hazardous material in the environment has been reduced to background.

Based on all of the above, the Board found that the Respondent LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of the MCP.

The Board also found that the Respondent LSP had failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(d) by failing to "disclose and explain" in his/her Opinions the forensic report of the sump sample, which constituted data known by him/her that may have tended to support or lead to an Opinion contrary to, or significantly different from, the one expressed. The Respondent LSP also failed to comply with this Rule by failing to "explain" in his/her Opinions the forensic report of the SRM samples, which contained the lab's suggested explanation that these samples contained a mixture of unweathered and weathered Jet A.

Finally, the Board found that the Respondent LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02(1) by failing to act with reasonable care and diligence in regard to both the RTN for the tank condition and the RTN for the SRM, in the following manner:

(a) Failing to learn how the Spill Buster product recovery system worked before concluding that its operation, and movement between the wells in the tank yard, somehow explained the increasing SPH product thicknesses being reported by former owner;
(b) Failing to learn what method the current owner used to gauge the tank, or its method detection limit;

(c) Concluding from the forensic report that the sump sample contained a mixture of weathered and unweathered jet fuel, when the report does not state or imply this in the textual discussion and the analytical results support the conclusion that the sample contained unweathered Jet A;
(d) Failing to seek to understand the significance of the forensic reports by speaking to someone who had expertise in such matters;
(e) Failing to consider boring logs from more than one soil boring before concluding that a continuous layer of Boston Blue clay existed throughout the area under the tank and that this layer would have prevented any release of Jet A from the tank's bottom from reaching groundwater;
(f) Disregarding in the RAO and Notification Retraction, without justification, the forensic report for the two SRM samples, which presented the possible explanation that those samples contained a mixture of weathered and unweathered product; and
(g) Failing to submit to MassDEP the forensic results for the sump sample.

In signing the ACO and accepting a Public Censure, the LSP did not make any admissions of fact or law but agreed not to contest the Board's Conclusions and Findings of Noncompliance.

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LSP Board Complaint 04C-03

VOLUNTARY SURRENDER OF LICENSE

On February 16, 2007, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to voluntarily surrender his/her LSP license and agreed not to reapply for an LSP license for five years. The Board and the LSP entered into the ACO before the Board had completed an investigation of a disciplinary complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP").

The complaint alleged that work the LSP performed from 1997 to 2004 at a contaminated site had violated MassDEP's regulations as well as the Board's rules of professional conduct. The allegations were based on a comprehensive audit by MassDEP of the response actions for two releases at the same site. Among other things, the complaint alleged that the LSP did not adequately assess the nature and extent of contamination and the risk posed to human health or the environment. The complaint also referenced audit findings for other sites where the LSP had worked, and suggested there might be a pattern of violations. The Board initiated an investigation of these allegations, focusing on the site that was the subject of the complaint and on two other sites.

At the site that was the subject of the complaint, the LSP performed work at a property where gasoline contamination had been detected in 1991. The property had been used by food processing businesses from 1961, and before that by a trolley company and

a trucking company. Following initial response actions by other consultants, the LSP conducted further site assessment work, beginning in 1997, and oversaw remedial work consisting of excavation and on-site treatment of contaminated soil. In 2001, results from groundwater sampling indicated a separate release of solvents had occurred on the same site. A proposal by the LSP to treat the groundwater impacted by this release was not approved by MassDEP due to potential, long term impacts on the leaching field for an on-site septic system. In 2002, the LSP filed a report with MassDEP stating that no significant risk of harm remained from the contamination at the site, as concentrations of the contaminants had decreased and continued to decrease rapidly. MassDEP's complaint claimed, however, that concentrations of certain contaminants still exceeded applicable groundwater standards at the time the report was filed, and that the finding of no significant risk was, therefore, improper. The complaint further alleged that the LSP had not collected sufficient data to assess the nature and extent of contamination at the property, and that s/he had improperly proceeded with remedial work before submitting a plan as was required. The Board was in the process of investigating the allegations when the parties entered into the ACO.

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LSP Board Complaint 04C-02(b)

PROHIBITION ON REAPPLICATION

On March 30, 2007, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed never to reapply for an LSP license. In March 2006, while the Complaint was still under investigation, the LSP chose not to renew his/her LSP license when it expired. The Board and the LSP entered into the ACO before the Board had completed an investigation of the pending disciplinary complaint.

In June 2004, the Massachusetts Department of Environment Protection ("MassDEP") filed a complaint with the Board alleging that the LSP violated the Board's Rules of Professional Conduct by failing to notify MassDEP that a private home with a drinking water well contaminated with the gasoline additive methyl-tertiary butyl ether (MTBE) had not been connected to the public water supply, as MassDEP had ordered. MassDEP alleged that as a result, a family of four continued to use the private well. MassDEP had ordered the connection, along with other actions, to address the hazards resulting from a release of gasoline from a service station located nearby.

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LSP Board Complaint 03C-06

LICENSE SUSPENSION

On July 7, 2008, the Respondent LSP's license was suspended for a period of six months. This license suspension was the result of an administrative consent order

("ACO") voluntarily entered into by the LSP and the Board to resolve a disciplinary complaint that was being investigated by the Board.

The Board and the LSP entered into the ACO before the Board had completed an investigation of this complaint. In entering into this consent agreement, the LSP Board did not make any findings, and the LSP did not admit to any wrongdoing.

MassDEP had filed the complaint against this LSP in 2003. The complaint alleged that work the LSP performed at a metal plating facility in an urban area from 1996 to 2002 had violated MassDEP's regulations and possibly the Board's rules of professional conduct as well. The allegations were based on an audit by MassDEP of the response actions the LSP conducted for releases of toxic metals at the site, including cadmium, nickel, cyanide, and lead. Among other things, the complaint alleged that the LSP did not adequately assess the nature, extent, and sources of contamination; did not properly evaluate the effectiveness of options to remediate the contamination; and did not provide sufficient support for his/her conclusion that the contamination did not pose a substantial hazard. The Board was investigating these allegations when the LSP and the Board entered into the ACO.

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LSP Board Complaint 03C-05

PROHIBITION ON REAPPLICATION

On June 30, 2005, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the LSP, who license had expired in January 2005, did not admit to any violation of law or regulation but agreed not to reapply for an LSP license for three and one-half years.

In December 2003, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board alleging that it had identified a pattern of poor performance by the LSP when s/he provided professional services and wrote LSP Opinions regarding several hazardous waste sites. For example, the MassDEP alleged that the LSP failed to consider potential sources of contamination at one site and had failed to adequately assess the extent of contamination. In January 2005, while the Complaint was still under investigation, the LSP chose not to renew his/her LSP license when it expired. The Board and the LSP entered into the ACO before the Board had completed an investigation of the pending disciplinary complaint

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LSP Board Complaint No. 03C-01

VOLUNTARY SURRENDER OF LICENSE

On April 15, 2005, pursuant to an Administrative Consent Order ("ACO"), the LSP voluntarily surrendered his/her LSP license. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of law or regulation but agreed not to contest the Board's findings and agreed to voluntarily surrender his/her LSP license. Under the terms of the ACO, the LSP is prohibited from reapplying for an LSP license for a period of thirty-five (35) months. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Summary of Findings

Based on its initial investigation, the Board determined that the LSP violated the following Board Rules of Professional Conduct:

IV. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.02 (1)** by failing to act with reasonable care and diligence in regard to the disposal sites outlined below**.** Examples of conduct that violated this regulation included, without limitation, the following:

x. Failing to exercise adequate oversight regarding work performed and opinions drafted by others;
xi. Failing to review reasonably available documentation regarding previous work performed at a site when taking over as successor LSP-of-Record; and
xii. Failing to define the nature and extent of releases, and failing to adequately characterize risks posed by those releases.

V. The LSP failed to comply with the Board's Rule of Professional Conduct **309 CMR 4.02(2)** by choosing to prepare a Method 3 risk characterization when the LSP lacked professional competency to do so.

VI. The LSP failed to comply with the Board's Rule of Professional Conduct **309 CMR 4.02(3)** by choosing to rely upon one or more experts whom the LSP unreasonably determined to be qualified. For example, the LSP violated this regulation by choosing to rely upon a former LSP knowing that this person's LSP license had been immediately suspended and ultimately revoked by the Board as a result of a disciplinary action.

VII. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.02(4)** by failing to meet the requirements of a successor LSP. For instance, the LSP failed to review analytical data, previous reports and DEP correspondence regarding sites.

VIII. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(2)** by rendering waste site activity opinions related to an assessment without managing, supervising or actually performing the assessment and without

periodically reviewing and evaluating the performance by others of such assessment.

IX. The LSP failed to comply with the Board's Rule of Professional Conduct **309 CMR 4.03(3)(a)** by failing to exercise independent professional judgment, for instance, by relying on the judgment of a former LSP whose license had been immediately suspended and ultimately revoked by the Board as a result of a disciplinary action.

X. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(b)** by failing to follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

XI. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(c)** by failing to collect sufficient data to define the nature and extent of releases and to adequately characterize potential risks posed by those releases.

XII. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(d)** by failing to discuss and explain known available information that may have tended to support or led to a contrary or significantly different opinion. For example, the LSP failed to consider other existing groundwater data in opinions filed regarding two sites reviewed by the Board.

Background of Case

In its initial investigation, the Board determined that the LSP failed to exercise appropriate oversight regarding work carried out by others at numerous hazardous waste sites. For instance, the Board found that at a number of sites, the LSP signed transmittal forms regarding opinions prepared by a former LSP ("LSP A") whose license had been immediately suspended and ultimately revoked by the Board, without the LSP exercising appropriate oversight over the former LSP. The Board also determined that the LSP's work demonstrated a failure to adequately define the nature and extent of contamination at hazardous waste sites and a failure to adequately assess potential risks posed by that contamination.

A. Facts regarding the LSP's inadequate oversight regarding work performed and reports prepared by former LSP

The Board immediately suspended LSP A's license on June 9, 2001. On September 10, 2003, the Board issued a final decision revoking LSP A's license and prohibiting him/her from reapplying for a license for five years. Examples of the LSP's lack of oversight regarding LSP A's work are as follows.

Site One

The property was occupied by a retail gasoline station and auto repair facility and had been used as a gasoline station for more than twenty years. Releases of petroleum contamination at the property were reported to DEP in 1997 and 1999. Three residential properties were located across the street and downgradient from the property.

In June 1999, while still a licensed LSP, LSP A filed a Class A-3 RAO for the site based upon a Method 3 risk characterization. On March 1, 2001, DEP issued a Notice of Audit Findings ("NOAF") citing numerous violations in the RAO submittal including: not fully characterizing the source and vertical and horizontal extent of the release; not fully characterizing the migration of groundwater contamination from the property to downgradient receptors by specifically not addressing potential indoor air impacts at the residential properties; not characterizing potential impacts to downgradient wetlands; and not delineating disposal site boundaries. DEP required preparation of an Audit Follow-up Plan ("AFP") with a scope of work to address the violations. On May 30, 2001, the DEP approved, with conditions, an AFP prepared by LSP A. The AFP proposed, among other things, indoor air sampling at two of the downgradient properties and sediment sampling in a downgradient wetland.

On July 15, 2002, the DEP received two documents: an Audit Completion Statement and a revised Class A-3 RAO. Both documents were prepared by LSPA but the accompanying transmittal forms were signed and sealed by the LSP. The first page of the Audit Completion Statement indicated that indoor air analysis at the two residences had not been conducted. The statement also indicated that downgradient sediment sampling had also been eliminated from the scope of the AFP. Neither the LSP nor LSP A had sought permission from DEP to modify the previously approved AFP.

The argument put forth in the Audit Completion Statement for not conducting the indoor air sampling was the discovery that one of the three downgradient residential properties had been a gasoline station in the 1930s and 1940s. The RAO report stated that this property was the major source of the off-site petroleum contamination. DEP did not accept this conclusion because, among other reasons, MTBE, a petroleum contaminant not present in gasoline during the 1930s and 1940s, was detected in groundwater in the furthest downgradient on-site monitoring well at a concentration of 330,000 ug/L in 1997 and was also subsequently detected in nearly all off-site downgradient monitoring wells, suggesting that groundwater contamination had migrated off the subject site.

The RAO also stated that, even though concentrations of gasoline constituents detected in groundwater at one of the downgradient residential properties were above applicable standards, a condition of No Significant Risk for the site existed nevertheless because the contamination detected was related to gasoline operations carried out at the downgradient property in the 1930's and 1940's.

The RAO report and Audit Completion Statement were characterized by a number of errors and inconsistencies in the text, including the following:

- The site plan did not indicate the locations of former USTs on the site.
- Groundwater flow direction was incorrectly reported because the north arrow on the site plan pointed in the wrong direction. DEP had pointed out in a 2001 NOAF the existence of this same error in the June 1999 RAO, but the error was not corrected.
- In the case of many of the analytical summary tables in the RAO report, exceedances were not included and those cells of the table where exceedances should have been noted were left blank. Conversely, the summary table in the Audit Completion Statement, filed at the same time as the RAO report, did include the exceedances.
- VPH groundwater data from November 2000 samples that had been held for 33 days beyond acceptable holding times were included within the RAO report even though DEP had stated in a previous NOAF that these data were unreliable.
- The text of the Risk Characterization states that no polycyclic aromatic hydrocarbons (PAHs) were detected in soils or groundwater at the property, but a table in the RAO indicates that several PAHs were detected in a waste oil UST grave at concentrations above applicable standards.
- Two separate pages of the Risk Characterization refer to the wrong site.

On January 17, 2003, the DEP issued a Notice of Response Action/Notice of Intent to Mobilize to the site owner indicating DEP's intention to perform limited response actions at the site. The letter stated that additional actions were necessary to evaluate and possibly abate the potential threat to public health and the environment. The DEP specifically noted that the presence of gasoline constituents in the vicinity of the residences at concentrations exceeding GW-2 standards might constitute a Condition of Substantial Release Migration. On April 10, 2003, DEP filed a complaint with the Board regarding the LSP's work at this site.

The LSP acknowledged that s/he did not undertake independent verification regarding what LSP A told him/her about site conditions. S/he stated that he was not aware that DEP had required indoor air sampling at the residences located across the street. S/he stated that s/he did not recall noticing blank spaces in the RAO report's analytical data tables. The LSP also acknowledged that s/he did not review the soil and groundwater laboratory analytical data reports before signing the transmittals forms for the Audit Completion Statement and the RAO opinion. The LSP acknowledged that s/he had been aware that the Board had revoked LSP A's license as the result of a disciplinary case.

The LSP stated that LSP A prepared the Method 3 risk characterization for the RAO report. The LSP stated that s/he had never prepared a Method 3 risk characterization and believed LSP A was competent to prepare one because s/he had been preparing them for some time.

Site Two

The property was used as passenger docking for whale watch tours and boat repair, parts and service. A newer building on the property was used as office and storage space. In November 1998, petroleum contamination was discovered on the property.

In May 1999, while still a licensed LSP, LSP A filed a Class A-3 RAO that relied upon an Activities and Use Limitation ("AUL"). On March 14, 2002, DEP issued an RAO Screening Review/ Summary of AUL Compliance Review requiring that the AUL either be corrected or a new RAO be submitted that did not rely on an AUL. On October 16, 2002, DEP received an AUL amendment prepared by LSP A and signed by the LSP. In December 2002, DEP issued a Notice of Noncompliance indicating that the AUL amendment had not corrected any of the previously identified mistakes.

On February 7, 2003, DEP received a Class A-2 RAO submittal prepared by LSP A. The LSP signed and stamped the accompanying transmittal form. The RAO report incorrectly classified groundwater at the site as only GW-2 and GW-3. The report indicated that the site was located in an Aquifer Protection District. As a result, MCP regulations required that groundwater at the site also be classified as GW-1. The RAO was based upon analytical data from a single round of groundwater samples collected at the site five years earlier in 1998.

Even though the text of the February 2003 RAO report stated the site was located in an Aquifer Protection District, the LSP, at an interview with the Board's Complaint Review Team held in April 2004, stated that when the February 2003 RAO was submitted, both s/he and LSP A did not realize the site was located within an Aquifer Protection District.

The February 2003 RAO report also included numerous errors, including:

- Page 7 refers to a map for the wrong town.
- Page 17 makes contradictory statements regarding groundwater flow direction.
- A table on page 21 is entitled "EPC ranges in groundwater" when it should have been entitled "EPC ranges in soil."

On April 8, 2003, DEP issued an NOAF stating that the RAO did not support a finding of No Significant Risk because groundwater was misclassified at the site and concentrations of benzene, toluene, MTBE and C9-C10 VPH fractions exceeded the Massachusetts Drinking Water Quality Standards.

On June 6, 2003, the Respondent submitted a Class A-2 RAO based on a Method 3 Risk Characterization. The text of this submittal was similar to the February 2003 RAO report prepared by LSP A and included some of the same typos. For instance, page 7 shows the same reference to a map from the wrong town.

The submittal was characterized by other errors, including that the groundwater summary table lists incorrect GW-1 standards for some compounds. This mistake resulted in two compounds (toluene and MTBE) being incorrectly listed as exceeding the GW-1 standard and benzene as being less than the GW-1 standard when, in fact, benzene was above the standard. This table heading also incorrectly indicates that the results are reported in parts per million (ppm) when in fact they are in parts per billion (ppb). Other errors in the June 2003 submittal are: some sections of the report indicated that the S-1 soil standard applied to the site, but page 19 stated that only the S-2 and S-3 standards applied; and the Risk Characterization erroneously stated that the "site is currently occupied as a multi-unit apartment building."

The RAO, based on a Method 3 Risk Characterization, stated that a condition of No Significant Risk existed at the site, despite the perceived exceedances of toluene and MTBE in one well, because "average concentrations of toluene and MTBE in all wells tested in 2003 are below GW-1 standards." The RAO states that EPCs for groundwater were calculated by "using arithmetic averages of concentrations throughout the plume." In other words, instead of treating each monitoring well as an exposure point, the data from the separate wells on the site were averaged together. MCP regulations do not allow averaging of groundwater data across the site, particularly in a GW-1 area.

The Board found that the nature and extent of contamination in soil was not adequately defined because soil sampling at the site was limited to the area within the tank grave despite the fact that petroleum contaminants were detected there at concentrations above applicable standards.

While the RAO report states that the site may be exempt from GW-1 classification pursuant to 310 CMR 40.0932(5)(b), the Method 3 Risk Characterization states "…[G]roundwater emanating from the property is believed to be used as a source of potable or irrigation water within at least a one-mile radius of the site. Therefore, the potential for ingestion or contact with groundwater as drinking water exists."

On December 24, 2003, DEP issued an Administrative Consent Order with Penalty ("ACOP") requiring the site owner to pay $5,600. In the ACOP, DEP stated that the July 30th RAO was invalid because a condition of No Significant Risk had not been achieved.

The LSP stated that s/he, and not LSP A, prepared the June 2003 RAO report, but acknowledged that s/he used the text of a Method 3 risk characterization prepared by LSP A for another site as a template for this report and forgot to remove the statement that the site was occupied by a multi-unit apartment building.

The Board found that it was more likely than not that LSP A prepared the February 2003 RAO submittal despite the LSP's statements that s/he wrote the report.
The Board also found that, if the LSP did prepare the February 2003 RAO submittal, s/he provided Professional Services outside his/her area of professional competency by preparing the Method 3 Risk Characterization upon which the RAO opinion is based. By

the LSP's own admission, s/he lacked the experience and knowledge to prepare a Method 3 Risk Characterization.

Site Three

On August 6, 1998, DEP received a Class B-2 RAO for this site. The RAO was prepared by LSP A but was signed by another LSP because, at that point in time, LSP A had not yet become an LSP. On June 11, 2001, DEP issued an NOAF requiring that either the RAO be retracted or follow-up work be conducted that included performing additional Risk Characterization, determining the extent of subsurface contamination, and documenting the work in a revised RAO. The NOAF also indicated that, while the RAO report had proposed an AUL, the AUL had never been recorded. The deadline for compliance was December 8, 2002.

On April 11, 2003, DEP issued an RAO Invalidation Letter regarding the August 1998 RAO. The letter stated that the 1998 RAO was invalid because the only new information DEP had received was that the LSP had recorded an AUL for the property on April 19, 2002. DEP had not received a revised RAO indicating that any follow-up work had been carried out as required by DEP's June 2001 NOAF. DEP subsequently entered into an ACOP with the site owner regarding the missed deadlines that required the site owner to pay a $7,000 penalty. The LSP stated that his/her understanding was that only an AUL needed to be filed and that s/he did not know that an NOAF had been issued.

B. Other Instances of Inadequate Oversight

Site Four

The property was the site of a gasoline station. In November 2001, LSP B filed an Immediate Response Action Completion Statement ("IRAC") for this property. On April 24, 2002, DEP issued an NOAF regarding the IRAC. The NOAF noted that during a site visit on March 15, 2002, DEP staff had observed the presence of 0.48 inches of free phase petroleum in an on-site monitoring well. Among other problems, the NOAF noted that the IRA failed to evaluate the potential for a condition of Substantial Release Migration (SRM) — i.e. whether in one year the gasoline release to the groundwater would likely result in the discharge of vapors into the occupied residential dwellings across the street and immediately downgradient of the release area. DEP required the filing of an IRA Plan by June 28, 2002, that included, at a minimum, the installation of downgradient monitoring wells and/or soil gas points to evaluate the possibility of an SRM.

On March 19, 2002, LSP B's license was immediately suspended by the Board as part of a disciplinary action. LSP B's license remained suspended until it was officially revoked by the Board on June 11, 2002. The LSP took over as LSP-of-Record.

On February 28, 2003, the LSP filed an IRAC/Class B-1 RAO. An IRA Plan had not been filed as required by DEP in the April 2002 NOAF, and the work DEP had required be undertaken at the site had not been carried out. The only new data in the February

2003 filing was one round of groundwater sampling from pre-existing monitoring wells collected in January 2003 and a visual check in January 2003 of pre-existing monitoring wells for free product. The February 2003 submission incorrectly noted in the text and in a table that no NAPL had been detected in any wells in March 2002 when DEP visited the site.

After receiving the February 2003 IRAC/Class B RAO, DEP issued an NOAF dated October 17, 2003, that stated that the work DEP had required had not been done and that DEP was concerned that a condition of SRM might exist relative to the migration of vapors from groundwater into occupied residential buildings downgradient of the release. The NOAF required the submission of an IRA Plan, Phase I Report, and Tier Classification by December 28, 2003.

On November 19, 2003, the LSP wrote a letter to the environmental consultant working on behalf of the site owner stating that s/he had been unaware that DEP had issued an NOAF or that DEP had measured free product in a monitoring well in March 2002. S/he wrote that, knowing these facts "changed everything since there is a possibility of an imminent hazard to the homes across [the street]."

The LSP stated that, although s/he was aware that the Board had revoked LSP B's license, s/he had a lot of faith in that person's work. The LSP stated that the environmental consultant who hired him/her did the assessment work at the site and the LSP drafted the IRAC/RAO submittal. The LSP stated that neither the site owner nor the environmental consultant informed him/her that DEP had issued a Notice of Noncompliance regarding the IRA Completion Statement prepared by the previous LSP and that s/he did not check the DEP file regarding the site. The LSP stated that s/he believed the previous LSP's report was only a draft and had not been filed. The Board found that the LSP failed to exercise adequate oversight regarding this site.

Site Five

The property had been used as a gasoline service station since the 1920's. On March 20, 2003, a release of petroleum contamination to groundwater was reported to DEP. On May 19, 2003, DEP received a Release Notification and a written RAM Plan for approval. A non-LSP consultant working on behalf of the property owner prepared the RAM Plan. The LSP submitted the RAM Plan as the LSP-of-Record. The RAM Plan stated that the petroleum contamination was in the area of a 4,000-gallon gasoline UST that had been installed at the site approximately twenty years ago. The RAM Plan proposed the injection of steam to remediate petroleum-impacted soil in the vicinity of the 4,000-gallon UST. At that point in time, DEP regulations required a 21-day presumptive approval period before undertaking RAM activities at a site.

After DEP raised concerns regarding the existence of abutters or potential environmental receptors, the Department, on June 16, 2003, received a RAM Plan Addendum signed by the non-LSP consultant. The accompanying transmittal form was signed by the LSP. The Addendum stated that a two-story commercial/residential

building was located upgradient and within 50 feet outside the perimeter of the remediation area.

On July 29, 2003, DEP issued a Notice of RAM Plan Conditional Approval. The LSP was sent a copy of this document. Among the conditions outlined in DEP's Conditional Approval letter was that, because previous groundwater analytical results detected petroleum contaminants at concentrations above applicable standards, the vapor recovery system at the site must remain on at all times during each 10-day remediation period and thereafter for a sufficient number of days to capture remaining vapors generated from residual heat. The letter stated the requirement for constant operation of the vapor recovery system could be modified only if sufficient analytical data was obtained to document that vapor migration during the treatment period would not exacerbate existing site conditions or impact the surrounding receptors. The Conditional Approval required that a RAM Status Report be filed by November 27, 2003.

On January 27, 2004, DEP received a RAM 120-day Status Report/ Modified RAM Plan signed by the non-LSP consultant. The LSP signed the accompanying transmittal form. The RAM Status Report was filed beyond the 120-day deadline specified in the DEP's Conditional Approval. The RAM Status Report stated that the steam injection system started running on August 20, 2003, and was shut down on September 5, 2003. The system ran for a total of ten days due to a mechanical failure in late August. The report stated that the vapor recovery portion of the steam injection system was not operated during the ten-day period.

On March 2, 2004, DEP issued an NON to the site owner. The NON stated that the January 2004 RAM Status Report/ Modified RAM Plan indicated that several of the conditions set by DEP in their RAM Plan approval letter had not been carried out, including, without limitation, failure to activate the vapor recovery system.

The LSP stated that s/he had misunderstood one paragraph in DEP's conditional approval letter and, as a result, had not realized that DEP had required that the vapor recovery portion of the remediation system be turned on the entire time the system was in operation. The LSP stated that DEP's conditional approval was conflicting regarding this requirement. The Board found that DEP's conditional approval letter was not conflicting on this point.

The LSP stated that the environmental consultant wrote all of the submissions for the site and that the LSP made edits and handled installation and operation of the remediation system. The LSP stated that s/he reviewed the reports before they were submitted to DEP. The Board found that the LSP failed to provide adequate oversight regarding this site. The Board also found that the LSP's failure to understand DEP's requirement that the vapor recovery portion of the remediation system be turned on while the system was in operation was another indication of his/her failure to provide adequate oversight.

C. Failing to Adequately Define Nature and Extent of Contamination and to Adequately Assess Potential Risk

The Board found that the LSP's work at the following two sites demonstrated a failure to adequately define the nature and extent of contamination and to adequately assess potential risks posed by that contamination.

Site Six

A former gasoline service station had been operating at the property. The station was decommissioned in February 2003. On April 10, 2003, the LSP filed a Class B-1 RAO regarding petroleum contamination at the site.

Groundwater samples were collected from five monitoring wells on August 29, 2002. Two wells were resampled in September 2002. In calculating the EPCs for groundwater in these two wells, only the September 2002 data were considered. If the data from both August and September had been averaged, the EPCs for some contaminants would have exceeded applicable standards.

DEP issued an NOAF regarding the RAO on February 25, 2004, stating that a condition of No Significant Risk had not been achieved at the site because, if both rounds of existing groundwater data had been averaged to calculate the EPCs, as required by the MCP, applicable standards for some contaminants would have been exceeded.

Site Seven

The property contained an office space and a three-bay auto repair garage. The property had been used as a gasoline station and an auto repair shop since 1927. In May 1998, high levels of petroleum contamination at concentrations exceeding Upper Concentration Limits were discovered in two groundwater monitoring wells at the property.

On November 1, 2002, DEP received a Class B-1 RAO prepared by the LSP that was based on a Method 1 Risk Characterization. The report stated that the 1998 groundwater contaminant levels in two of three on-site wells [MW-1, MW-2] were in the percentage range and clearly indicated the presence of free product on the water table. The report went on to state that the results of the August 2002 sampling, when compared to the 1998 results, showed a significant natural bioremediation underway. In October 2002, the LSP resampled two of the three on-site wells and reported that the results showed there was only one contaminant present at a concentration greater than the applicable standards. The report also stated that the reduced levels indicated that no continuing source of contamination was present.

Groundwater samples were collected in both August and October 2002, but the RAO relied on only the October analytical data. When sampled for Volatile Petroleum

Hydrocarbons in August 2002, the levels in two of the wells were significantly higher than when sampled two months later in October 2002. According to the levels presented in the report's tables, all contaminant concentrations in these two wells dropped between August and October 2002 with the exception of C9-C12 aliphatics which was present in a higher concentration in well MW-2 in October 2002.

The RAO stated the groundwater monitoring wells were all below the groundwater standards for each Contaminant of Concern except MW-2, which had a slight exceedance of C9-C10 aromatic compounds (4,030 vs. 4,000 ppb). However, this statement was not correct because the October 2002 analytical result for the C9 – C10 aromatics in well MW-1 was incorrectly reported in the summary table as 2,750 ug/l (the detection limit), when in fact the result was 5,860 ug/L. This exceedance was not mentioned in the text of the RAO report.

On April 18, 2003, DEP issued an RAO Invalidation Letter to the PRP. The reason stated for the invalidation was that C9-C10 aromatics had been detected in the two monitoring wells at concentrations exceeding the applicable Method 1, GW-3 standard. In addition, if the groundwater analytical data for the two sampling dates had been averaged, the GW-3 standard would have been exceeded for several other compounds as well.

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LSP Board Complaint No. 02C-08

PUBLIC CENSURE

This action resulted from a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP"). The Board's decision to seek disciplinary action against the LSP was based on its determination, after an investigation by a Complaint Review Team, that the LSP did not have sufficient basis to file a Class A-3 RAO for a disposal site at a school and that s/he had made other MCP errors in filing the RAO. Of greatest concern was that the LSP had not demonstrated that light non-aqueous phase liquid ("LNAPL") was sufficiently eliminated or controlled at this site. The Board also found that the LSP had not acted with reasonable care and diligence. As a result, the Board asserted in an Order to Show Cause that the LSP had violated the Board Rules of Professional Conduct:

Summary of Findings

I. The Respondent LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of the MCP.

II. The Respondent LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02(1) by failing to act with reasonable care and diligence in the following manner:

- Failing to ensure that Respondent LSP's firm maintained its LNAPL monitoring program for a sufficient time to demonstrate that LNAPL had been eliminated or controlled;
- Failing to ensure that that the MCP requirements for filing an RAO had been met before filing a Class A-3 RAO; and
- Failing to otherwise follow the requirements and procedures set forth in the applicable provisions of the MCP.

Background of Case

The property involved in this case was occupied by a private, coeducational day school for students in nursery school through grade 12. The surrounding area was residential, and the school and nearby residences were all served by public water and sewer. The area is served by public water and sewer. The school had been heated with No. 2 fuel oil since the 1940s.

In August 1992, a 1,000-gallon No. 2 fuel oil underground storage tank ("UST") was excavated and removed from beneath a driveway near a foundation wall at the front of one of the school's buildings. This building was a 3-story, brick structure housing classrooms, a library, and storage areas above a basement. When the UST was removed, a hole was reportedly observed in its base, and petroleum-impacted soil and product were reportedly observed in the tank grave.

Upon the discovery and removal of this leaking UST in August 1992, the school's environmental consultant [Consultant #1], conducted the initial response activities, including the removal of approximately 9 tons of petroleum-impacted soil. Two soil samples collected from the stockpiled soil reportedly contained 4,840 mg/Kg and 22,170 mg/Kg of Total Petroleum Hydrocarbons ("TPH"). Petroleum staining and product had been observed in the tank grave, but additional excavation of these impacted soils was not conducted due to the proximity of a foundation wall and concerns for the structural integrity of the adjacent school building. Confirmatory samples were not collected from the limits of the excavation. The site was reported to MassDEP, and the tank grave was backfilled with clean fill.

In early 1993, Consultant #1 installed three groundwater monitoring wells and, according to its report, observed some aromatic volatile constituents (BTEX) in "two of the three wells."

In July 1994, Consultant #1 observed 22 inches of free-phase product identified as heating oil in MW-1, located near the location of the former UST, and MassDEP was notified again. MassDEP verbally approved implementation of an Immediate Response Action ("IRA") comprising assessment activities and manual recovery of the LNAPL from MW-1. MassDEP assigned a separate RTN to this 72-hour reporting condition.

In the second half of 1994 and the first half of 1995, Consultant #1 implemented IRA activities that included (a) periodic bailing of MW-1, (b) installation of seven small-

diameter Geoprobe monitoring wells, and (c) assessment of indoor air quality at the adjacent school building.

In bailing MW-1 every few weeks from Sept. 1994 to May 1995, Consultant #1 consistently found product at thicknesses ranging from 2 to 19 inches. Additionally, Consultant #1 measured minor thicknesses of product in monitoring well GP-2, which was located about 40 feet to the west of the tank grave along the school building's front foundation wall.

Water quality testing of the monitoring wells indicted a dissolved plume of BTEX constituents at relatively low concentrations (below GW-2 Standards) in some wells.

In March 1995, an air-testing firm conducted indoor air testing in the school building using a modified EPA method TO-1. According to the Respondent LSP's firm's subsequent Phase I Report, this testing indicated "no unusual levels" of targeted air contaminants.

In June 1995, the school retained the Respondent LSP's firm to complete a Phase I Report and Tier Classification Submittal. On June 12, 1995, the firm conducted a site reconnaissance to assess current conditions. LNAPL was again found in MW-1, this time at a thickness of 16 inches. The firm then installed six more small-diameter Geoprobe monitoring wells as part of the ongoing IRA to provide additional information on the extent, thickness, and recoverable volume of LNAPL. It was anticipated that all of this data would be used in the preparation of a Release Abatement Measure ("RAM") plan.

At that time, the Respondent LSP was a vice president at the firm, responsible for operations at three of the firm's offices. Another LSP in one of these three offices was typically the "Project LSP" for each of the firm's projects and was responsible for overseeing the firm's response actions at the site. The Respondent LSP was the direct supervisor of these Project LSPs and was responsible for reviewing the technical accuracy of all work and for signing all documents on behalf of the firm.

The firm's Project LSP drafted all the reports submitted to MassDEP for this site. The Respondent LSP reportedly reviewed these reports and signed and stamped all 21E submittals to MassDEP. The Respondent LSP also reportedly met with this Project LSP on a weekly basis to review the status of each of the projects being overseen by the Project LSP, including this project.

On July 7, 1995, the Respondent LSP submitted an LSP Evaluation Opinion, a Phase I Report, and a RAM Plan to MassDEP. On July 21, 1995, the Respondent LSP submitted a Tier Classification and an IRA Completion Statement. The site was classified as Tier II.

According to the RAM Plan, LNAPL had accumulated on the water table near the former UST and under the fill pipe (located immediately adjacent to the front of the school building). The water table at that time ranged from 6-10 feet below ground surface.

LNAPL had also migrated along the building's front foundation wall to a second area. According to the Respondent LSP, the LNAPL appeared to have migrated through and accumulated within the more permeable fill material in the former UST grave and along the building's foundation. The LSP stated that split-spoon soil samples collected during the installation of monitoring wells indicated the presence of glacial till outside the UST area and foundation and that this material likely confined the LNAPL, precluding its migration. In the RAM Plan, the Respondent's firm proposed two phases of RAM activities. The first phase included excavating contaminated soil (caused by tank overfills) from the area beneath the former UST's fill pipe and, in addition, actively pumping LNAPL from a temporary recovery well to be installed in a test pit dug adjacent to MW-1. For the RAM's second phase, the firm proposed (1) the installation of two recovery wells (RW-1 adjacent to MW-1 and RW-2 in the area near the front foundation wall by GP-2, where LNAPL had been observed) and (2) the passive recovery of LNAPL using Petrotrap automatic recovery bailers.

In furtherance of this RAM Plan, the firm removed 26 tons of contaminated soil to a depth of 4 feet from beneath the former fill pipe. At that depth, no TPH was detected in the soil. No additional soil was removed from the site despite the confirmed presence of contamination at a depth of around 10 feet near MW-1 and, as noted during the original tank removal, at the bottom of the tank grave.

According to the Respondent LSP's subsequent Response Action Outcome Statement ("RAO"), it was not feasible to remove additional contaminated soils. The RAO stated:

> Constraints in the area such as utilities, buildings, wrought iron fences, and school traffic prohibited excavations in deeper areas especially near the building. In order to remove this soil, intensive structural supports would have been required which was excessive given the nature of oil contamination.

When the test pit was excavated adjacent to MW-1 to install the temporary recovery well, free product and groundwater were encountered at 9 feet below grade. Over several days, about 48 gallons of oil were pumped from Pit B using the temporary recovery well and a portable vacuum unit. However, oil migration into the excavation was slow, reportedly due to the low permeability of the soils. The firm then installed a 6-inch permanent recovery well there (RW-1) and another one at GP-2 (RW-2). A 4-inch Petrotrap passive recovery system was installed in each recovery well, and an absorbent sock was placed in MW-1.

Additionally, at the time product was being pumped from the temporary recovery well, the firm pumped about 40 gallons of oil from a nearby manhole containing an oil/water separator and then removed the accumulated oil residue (sludge) from that structure.

For the next 20 months, "passive" recovery of product took place. Monitoring was conducted periodically by the school's custodian; when product was observed, it was measured and collected. Meanwhile, staff from LSP's firm periodically examined some of the thirteen existing Geoprobe monitoring wells installed in the area around the tank

grave. The results of this monitoring, measuring, and recovery effort were submitted to MassDEP in various reports, including the RAO report.

By the spring of 1997, the Respondent LSP and Project LSP agreed that this effort had been essentially successful. Only de minimis volumes of product had been recovered over the previous 4 months, and they concluded that they had done all they could do to remediate LNAPL at the site. They initiated a confirmatory round of groundwater sampling from RW-1 and RW-2. In addition, at their direction indoor air in the school's basement was sampled and analyzed.

In July 1997, the Respondent LSP signed a Class A-3 RAO. In the report, the LSP acknowledged that some oil residues remained at the site, particularly below the driveway area. The LSP also signed an Opinion supporting an Activity and Use Limitation ("AUL") for the site that prohibited (a) gardening and activities that would involve children contacting subsurface soils, and (b) utility repairs unless workers were "appropriately protected." The RAO and AUL were filed with MassDEP on November 14, 1997.

In July 2000, during an audit site inspection of the RAO and AUL for this site, MassDEP measured 1.01 feet of LNAPL in GP-14. In November 2000, MassDEP issued a Notice of Audit Findings and a Notice of Noncompliance identifying several violations of the MCP in connection with the filing of the RAO and AUL for this site. In March 2001, the school retracted the RAO and AUL.

In July 2002, MassDEP filed a disciplinary complaint against the Respondent LSP with the LSP Board regarding the Respondent LSP's professional services as the LSP-of-Record for the RAO and AUL noted above. The Board subsequently appointed a Complaint Review Team ("CRT") to investigate this complaint.

The Board's Conclusions and Findings of Noncompliance

Upon the conclusion of its investigation, the CRT made the following findings, which were adopted by the Board and set forth in the Board's Order To Show Cause.

Finding #1
Failed to demonstrate that LNAPL was sufficiently eliminated or controlled

Pursuant to § 40.1003(5)(a)(4) of the MCP, a Class A or B RAO "shall not be achieved" unless and until LNAPL "which is resulting or is likely to result in an increase in concentrations of oil and/or hazardous material in an environmental medium, either as a consequence of a direct discharge or through intermedia transfer of oil and/or hazardous material, is eliminated or controlled."

The RAM Completion Report indicated that apparent thicknesses of 4.44 feet and 1.7 feet of LNAPL were measured in two monitoring wells on May 14, 1996. There was no

indication that these two well were monitored for LNAPL again before the RAO was filed on November 14, 1997.

In his/her defense, the Respondent LSP claimed that the LNAPL data reported were likely in error and that these May 14, 1996, measurements of LNAPL by the firm's staff were likely in inches, not feet. However, s/he was unable to produce any direct witness or backup documentation to support that claim and was unable to locate the relevant field logs of these measurements.

The CRT concluded that given the persistence LNAPL exhibited at this site, even if the LNAPL thickness measurements in these wells in May 1996 were in inches and not feet, the Respondent LSP should have continued monitoring. The presence of LNAPL with a thickness equal to or greater than ½ inch in an environmental medium exceeds the Upper Concentration Limit ("UCL") specified in the MCP and thus does not support a conclusion that LNAPL has been "eliminated or controlled."

The Respondent LSP also claimed that that it was likely that the firm's staff did conduct further monitoring of these two monitoring wells after May 1996. However, the CRT did not credit this claim because the Respondent LSP could produce no field logs or other documentary evidence of any further monitoring of these wells after May.

The Respondent LSP also contended that because the Geoprobe wells had a small diameter of only ¾ of an inch, a "wicking effect" exaggerated the actual LNAPL thickness. The CRT did not view this contention as an exonerating defense. Even assuming a ¾ inch diameter and some wicking effect in these wells, the CRT concluded that the Respondent LSP should have monitored for LNAPL after May 14, 1996. The product measured in those wells on May 14 was at least an indicator that, at a minimum, further monitoring for LNAPL in those areas was required before submitting an RAO.

Therefore, it was not reasonable for the Respondent LSP to have concluded that LNAPL had been addressed sufficiently to file an RAO. At the time the RAO was filed, the Respondent LSP did not have sufficient information to know whether LNAPL existed at the site, and the RAO filed did not demonstrate that LNAPL was sufficiently eliminated or controlled to meet MCP requirements.

Finding #2
Failed to determine the vertical and horizontal extent of
LNAPL and petroleum contamination in soil and groundwater

Pursuant to § 40.0904(2)(a) of the MCP, the documentation of the Risk Characterization must contain a description of the extent of the release, including where appropriate the horizontal and vertical extent and concentration of OHM in all evaluated media.

At this site, the Respondent LSP did not document the horizontal extent of the LNAPL or the plume of contaminated groundwater. S/he also did not document the horizontal or vertical extent of the soil contamination.

The Respondent contended that given (a) the reasonableness of the firm's view that the contamination at the site was confined by glacial till and (b) the asymptotic results of the product recovery efforts, the risk from LNAPL, soil contamination, and groundwater contamination had been adequately characterized, even if the horizontal and vertical extent had not been precisely determined.

However, the Respondent LSP presented no information to demonstrate that the LNAPL plume or the groundwater petroleum plume did not extend beyond GP-14. Dissolved concentrations of TPH were characterized by only one round of data collected from just two monitoring wells in November 1995, and the concentrations detected exceeded the UCL and the Method 1 GW-2 and GW-3 Standards in place when the RAO was filed in November 1997. As for soil contamination, apart from the two soil samples collected from the stockpile in 1992, petroleum hydrocarbon soil data consisted of one sample collected near the former fill port, two samples collected from the test pit, and a fourth sample collected from a single boring. This data set was inadequate for the Respondent LSP to define the extent of soil contamination.

Therefore, the LSP failed to adequately evaluate the extent of separate-phase product and petroleum contamination in soil and groundwater at the site prior to the submission of the RAO, as required by the MCP.

Finding#3:
Disregarded Method 1 GW-3 Standards, which the groundwater failed to meet

Method 1 GW-3 Standards consider the potential migration of OHM to surface water. Pursuant to § 40.0932(2) of the MCP, groundwater at all disposal sites shall be considered a potential source of discharge to surface water and shall be categorized, at a minimum, as GW-3 during the Risk Characterization.

In November 1995, TPH was detected in groundwater at the site in GP-12 (in the tank grave) and GP-16 (along foundation wall) at 115 mg/L and 299 mg/L respectively. Both of these concentrations exceeded the GW-3 Standard. (At the time these data were collected in 1995, the GW-3 Standard was 50 mg/L. By the time the RAO was filed in November 1997, MassDEP had lowered the GW-3 Standard to 20 mg/L.) Neither of these monitoring wells was sampled again, nor were any of the other wells at the site subsequently sampled for TPH or petroleum hydrocarbon fractions.

The November 1995 data also indicated that several PAHs were present in GP-12 and GP-16, including phenanthrene, which was reported at concentrations of 90 µg/L and 100 µg/L respectively, both of which exceed the Method 1 GW-3 Standard of 50 µg/L (in place both in 1995 and when the RAO was filed). Neither of these wells was sampled again.

In the RAO, the LSP stated: "Category GW-3 (discharge to surface water) was not used since contaminated groundwater is not discharging off-site and the nearest surface water

body is ½ mile away." However, the determination of applicable groundwater categories at disposal sites is a required element of all RAOs, and GW-3 cannot be disregarded without a determination made pursuant to 310 CMR 40.0987 showing that "a discharge to surface water will not occur," considering site-specific conditions. Such a determination must be "scientifically justified and sufficiently documented to demonstrate that [RAPS] has been met." Subsection 40.0987(2) states that the determination "shall be documented by" either transport and fate modeling and/or long-term groundwater modeling.

The Respondent LSP did not dispute the allegation that he failed to apply the GW-3 Standard. There is also no dispute that in the RAO the LSP did not demonstrate scientifically or document sufficiently why a discharge to surface water would not occur. At the time this RAO was filed in late 1997, the LSP appears to have fundamentally misunderstood how to apply GW-3 Standards at MCP sites.

Nevertheless, in responding to the Complaint filed with the Board by MassDEP, the Respondent LSP offered the following "technical justification" defense (none of which was offered in the RAO report):

> *The [RAO] report incorrectly stated that GW-3 didn't apply. The results of the Site assessment at the time, however, indicated that dissolved constituents were low and were considered to be limited to the [school] property on the down gradient side of the former tank location. No detectable BTEX was found in a down gradient well (GP-8). Little recoverable LNAPL was left, and no further dissolved migration was contemplated. This information coupled with the fact that there were no surface water bodies within one-half mile of the Site indicated that fate and transport modeling was not necessary to demonstrate compliance with GW-3 standards. It was implicitly assumed for these reasons that a release of site contaminants to surface water (i.e., GW-3 compliance* [sic]*) via groundwater discharge would not be a realistic scenario.*

Even if it had been included within the RAO submitted by the LSP, this attempt at "technical justification" would not have met the rigorous technical requirements for "transport and fate modeling" specified in the MCP at 40.0987. First, GW-8 was sampled only once, in November 1995, two years before the RAO was filed. During those two years, the plume could have moved to GW-8. Second, no data was submitted to demonstrate the direction of groundwater flow, so it was not at all certain, and had not been demonstrated, that the plume of contaminated groundwater from the tank grave (GW-12) would have passed through GW-8. Third, GW-8 was less likely to be downgradient of GW-16 (located to the west of the tank grave along the building foundation), where LNAPL had also been observed. The defense the LSP put forth here was simply not sufficient.

Therefore, it was a violation of the MCP for the LSP to have disregarded the GW-3 Standard in the RAO.

Finding #4:
Failed to identify and document a GW-2 Exposure Point Concentration,
or to recognize an Upper Concentration Limit exceedance,
for TPH in groundwater

Pursuant to 310 CMR 40.0926(1), "For each [OHM] in each medium at each Exposure Point, an Exposure Point Concentration shall be identified and documented."

The Respondent LSP correctly classified groundwater at the site as GW-2, because groundwater in the area was at less than 15 feet below ground surface and much of the disposal site was within 30 feet of an occupied building (here a school).

However, the Respondent LSP did not identify and document a GW-2 Exposure Point Concentration ("EPC") for TPH. Specifically, in the Risk Characterization, the Respondent LSP did not consider TPH groundwater data from wells GP-12 and GP-16 (each sampled only once, in November 1995) that exceeded the GW-2 Standard for TPH (1,000 µg/L) in place at the time the RAO was filed in November 1997. These reported concentrations of TPH were not carried through to the final risk characterization.

In addition, although the TPH concentrations reported in both GP-12 and GP-16 exceeded the UCL of 100,000 µg/L, the Respondent LSP failed to note this in the RAO.

Pursuant to § 40.1036(5) and 40.1046(5) of the MCP, a Class A or Class B RAO cannot be achieved at any site where average groundwater concentrations exceed the UCL. Therefore, the Respondent LSP violated this MCP prohibition when he approved the filing of this RAO.

Finding #5:
Improperly used an Activity and Use Limitation
to justify a conclusion of No Significant Risk

In the RAO report, the Respondent LSP calculated an EPC of 4,801 mg/Kg for TPH in the "potentially accessible" soil. Using a Method 1 Risk Characterization, the Respondent LSP properly classified the potentially accessible soil as S-2/GW-2.

An EPC of 4,801 mg/Kg exceeded the Method 1 S-2/GW-2 Standard for TPH in effect at the time the RAO was filed in November 1997. That standard was 2,000 mg/Kg.

Nevertheless, the Respondent LSP approved a Class A-3 RAO for this disposal site, concluding in the RAO report that "the only potential risk remaining on the site is exposure to oil contaminated soils above the S-2/GW-2 standard from a depth of 3-15 ft from incidental contact during future site work/utility repair. This potential risk will be eliminated through implementation of an Activity and Use Limitation (AUL) made part of this package." The Respondent LSP filed an AUL in an attempt to eliminate this risk.

Pursuant to § 40.1012(4) of the MCP, an AUL "shall not be used . . . to justify a conclusion that a condition of No Significant Risk exists or has been achieved at sites characterized using Method 1 or Method 2 if an identified Exposure Point Concentration exceeds an applicable Method 1 or Method 2 standard."

Thus, because the EPC for TPH for potentially accessible soil exceeded the applicable Method 1 Standard, the Respondent LSP violated the MCP by approving a Class A-3 RAO using an AUL to justify a conclusion of No Significant Risk.

During the CRT's investigation, the Respondent LSP claimed that because s/he had been overly cautious in using 4,801 mg/Kg as the EPC for TPH in potentially accessible soil, an EPC of less than 2,000 mg/Kg could be supported for this soil category. In support of this claim, the Respondent LSP noted that in the RAO s/he had pointed out this conservative bias. In the RAO report, immediately after announcing an S-2/GW-2 EPC of 4,801 ppm (mg/Kg) for TPH, the Respondent LSP added this language: "Average soil concentrations may indeed be closer to 1906 ppm since an abnormally high value was used which may be localized in comparison with the rest of the area."

In calculating this soil EPC for TPH, the Respondent LSP included (among other data) the TPH results from two soil samples collected by Consultant 1. These two samples contained 4,840 and 22,170 mg/Kg of TPH respectively. According to the LSP, the "abnormally high value" s/he referred to in the RAO is the one for 22,170 mg/Kg. In the LSP's response to MassDEP's Complaint, the LSP stated that "it was likely" that these samples were taken from the soil stockpile before it was removed. According to the LSP, if these soils were indeed disposed off-site, it would not be appropriate to include this value in the calculation of the EPC, as the backfill soil would be more representative of the existing soil at the time the RAO was filed.

The CRT found this line of argument to be unpersuasive. In the Phase I Report filed in June 1995, the Respondent LSP had stated that when this UST was removed "additional affected soils were left in place due to concerns from surrounding structures." At that time, confirmatory samples were not collected from the limits of the excavation. Thus, there was no assurance that the concentration of TPH in deeper soils left in place beneath the tank grave, and/or in the vicinity of well MW-1, was not similar to the concentrations of TPH found in the two samples collected by the prior consultant from the excavated soil.

Furthermore, because the Respondent LSP had inadequately characterized the extent of soil contamination, § 40.0926(3) of the MCP becomes relevant. This section states that the use of maximum concentrations (rather than an arithmetic average) is appropriate when there is insufficient data or other information to adequately characterize the site. Therefore, for all these reasons, it would not be proper to exclude the 22,170 mg/Kg value from the EPC calculation for TPH.

As a result, there was insufficient support to credit the Respondent LSP's assertion that a fairly calculated EPC for this soil category would have been less than 2,000 mg/Kg.

Resolution by Administrative Consent Order

In May 2006, the Board brought formal disciplinary charges against the Respondent LSP based on the CRT findings noted above. These charges were set forth in an Order To Show Cause. The Respondent LSP filed an answer contesting the formal charges and requesting an adjudicatory hearing. Prior to the hearing, the Board and the Respondent LSP entered into an Administrative Consent Order in which the Respondent did not admit to any violation of law or regulation but agreed to waive his/her right to a hearing and accept a Public Censure.

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LSP Board Complaint 03C-06

LICENSE SUSPENSION

On July 7, 2008, the Respondent LSP's license was suspended for a period of six months. This license suspension was the result of an administrative consent order ("ACO") voluntarily entered into by the LSP and the Board to resolve a disciplinary complaint that was being investigated by the Board.

The Board and the LSP entered into the ACO before the Board had completed an investigation of this complaint. In entering into this consent agreement, the LSP Board did not make any findings, and the LSP did not admit to any wrongdoing.

MassDEP had filed the complaint against this LSP in 2003. The complaint alleged that work the LSP performed at a metal plating facility in an urban area from 1996 to 2002 had violated MassDEP's regulations and possibly the Board's rules of professional conduct as well. The allegations were based on an audit by MassDEP of the response actions the LSP conducted for releases of toxic metals at the site, including cadmium, nickel, cyanide, and lead. Among other things, the complaint alleged that the LSP did not adequately assess the nature, extent, and sources of contamination; did not properly evaluate the effectiveness of options to remediate the contamination; and did not provide sufficient support for his/her conclusion that the contamination did not pose a substantial hazard. The Board was investigating these when the LSP and the Board entered into the ACO.

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LSP Board Complaint Number 02C-07

PROHIBITION ON REAPPLICATION

On September 22, 2005, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the LSP, who license had expired in July 2005, did not admit to any violation of law or regulation but agreed not to reapply for an LSP for three and one-half years.

In May 2002, DEP filed a complaint with the Board alleging that the LSP violated several of the Board's Rules of Professional Conduct when s/he provided professional services and wrote an LSP Opinion regarding a contaminated gasoline station site. DEP alleged in its complaint that the LSP failed to identify and evaluate the source of contamination at the property and failed to adequately assess the extent of contamination at the site. In July 2005, while the Complaint was still under investigation, the LSP chose not to renew his/her LSP license when it expired. The ACO resolved the pending disciplinary complaint.

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LSP Board Complaint 02C-04 and 07C-07

LICENSE SUSPENSION

On March 10, 2008, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her LSP license for a period of two years. The LSP is also required to complete certain continuing education coursework prior to the end of the suspension period. The Board and the LSP entered into the ACO before the Board had completed an investigation of two separate disciplinary complaints filed by members of the public.

In the first complaint, filed in 2002, a neighborhood association alleged that the LSP had failed to adequately assess and clean up contaminated soils and groundwater at a former industrial property that was contaminated with petroleum and metals. In the second complaint, filed in April 2007, two citizens alleged that the LSP failed to meet the Massachusetts Department of Environmental Protections' ("MassDEP's) requirements and the Board's professional standards when s/he filed a "Downgradient Property Status" report for a property that had previously been used as a service station. In this report, the LSP asserted that the petroleum contamination on the property likely originated from a release at an adjacent property that was also formerly used as a service station. MassDEP later audited this report and found it to be inadequate to support this assertion.

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LSP Board Complaint Numbers 02C-03 and 03C-02

LICENSE SUSPENSION

On November 13, 2006, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the license of an LSP for a period of one hundred and eighty (180) days for violations of the Board's Rules of Professional Conduct provided the LSP successfully completes certain course requirements. If the LSP fails to comply with the terms of the ACO, the LSP's license will be suspended for a total of two hundred and seventy (270) days. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of any law or regulation but agreed not to contest the Board's findings and accepted a one hundred and eighty (180) day suspension of his/her LSP license. This

action resulted from a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP") and a separate complaint filed by a private party.

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

309 CMR 4.02 (1) by failing to act with reasonable care and diligence in regard to the disposal sites outlined below. Examples of conduct that violated this regulation included, without limitation, the following:

- In the case of Site A, failing to collect sufficient data to assess the nature and extent of contamination at the site.

- In the case of Site B, failing to consider or mention in the 1998 RAO opinion the higher August 1998 groundwater result; submitting the 1998 RAO opinion when vinyl chloride was present in groundwater at concentrations exceeding GW-1 standards; relying on an AUL to restrict groundwater use in a GW-1 area; relying on incorrect mathematical calculations in determining potential risks at the site; and failing to collect sufficient data to support the 2003 RAO opinion.

- In the case of Site C, averaging soil and groundwater concentrations from across the site when calculating potential risk; incorrectly stating that GW-2 did not apply to the site; making calculation errors in assessing potential risks; failing to consider some contaminants in the risk characterization; failing to define the horizontal extent of contamination at the site; and failing to collect a surface water sample from the nearby river.

- In the case of Site D, failing to collect sufficient groundwater data; and failing to recognize a potential Critical Exposure Pathway/ Condition of Substantial Release Migration.

309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

309 CMR 4.03(3)(c) by failing to collect sufficient data to define the nature and extent of the releases and to adequately characterize the risks posed by those releases.

309 CMR 4.03(3)(d) by, among other things, in the case of the RAO opinion for Site B, failing to discuss and explain the August 1998 groundwater sampling result from monitoring well OW-2.

Background of Case

The Board's investigation focused on the LSP's work at four different hazardous waste sites. The relevant facts regarding each site are explained below.

Site A

Site A was a ten-acre parcel of land used as an auto salvage yard from approximately 1943 to 1991. The southern two-thirds of the property was located within a wetland buffer zone due to its proximity to an abutting river. In March 1996, the property was subdivided into 35 residential lots that were being developed as single-family homes.

Stained soils were observed throughout the property during site assessments in 1987 and 1991. Between 1991 and 1992, the site owner excavated approximately 3,500 cubic yards of visually contaminated soils and stockpiled it on the site in thirteen piles. The LSP's firm first became involved at the site in late 1992, after the excavated soils had been stockpiled into the thirteen piles.

In March 1996, the LSP filed a Class A-2 Response Action Outcome ("RAO") statement with the DEP. DEP issued a Notice of Audit Findings ("NOAF") regarding the RAO submittal on February 28, 2001. The NOAF listed numerous MCP violations and required that additional assessment be carried out at the site.

The Board found that the LSP's work in regard to the RAO was deficient in the following ways:

- The LSP did not collect sufficient data to adequately assess the nature and extent of contamination at the site. More specifically, the LSP:
    - did not collect sufficient samples near the excavation of a former 500-gallon UST and the RAO statement did not indicate that any data had been collected in the area where a former septic system had been located;
    - an insufficient number of soil samples were sent to a laboratory for analysis;
    - some of the soil samples were collected via methods (e.g. auger flight and composite) that did not represent the standard of practice at that time;
    - soil samples were not analyzed for all potential contaminants of concern; and
    - insufficient groundwater data was collected at the site both in terms of number of monitoring wells at the site, the number of samples taken from the wells, and the fact that the RAO statement was based on groundwater data that was more than four years old.

- The LSP excavated an additional 3,000 cubic yards of visually contaminated soils from the site. Of this 3,000 cubic yards, the most visually contaminated soils were added to the contaminated soils previously stockpiled on site without first seeking approval from DEP.

Site B

Site B was approximately .35 acres and was mostly paved except for a single-story building of slab on grade concrete block construction. The property was used as an automobile repair shop and was abutted by a former industrial property. The property was located in a DEP-approved Zone II of contribution to a nearby public drinking water well.

On August 31, 1998, DEP was notified of a release based on a groundwater sample collected from a monitoring well on the site on August 12, 1998 that had a vinyl chloride concentration of 56 ppb triggering a 72-hour reporting requirement. In December 1998, the LSP filed a Class B-2 RAO statement with DEP. DEP issued an NOAF regarding the 1998 RAO statement on October 15, 2002. The NOAF listed a number of MCP violations and stated that the RAO opinion was not valid because it did not support a conclusion that 'no significant risk' existed at the site.

The Board found the LSP's work in regard to the 1998 RAO submittal was deficient in the following ways:

- The analytical data attached to the RAO statement indicated that a reportable concentration of vinyl chloride was first discovered in groundwater in 1995. The RAO statement provided no justification why the vinyl chloride was not reported to DEP until three years later.

- Insufficient assessment was performed to determine the nature and extent of contamination at the site. More specifically, the RAO statement does not indicate that any soil samples were collected in the area surrounding the groundwater monitoring well (OW-2) where the vinyl chloride contamination was found in groundwater, or in the vicinity of the former waste oil tank or septic system which were identified in the RAO statement as potential source areas. Also, the RAO statement was based on a single groundwater sampling event.

- The higher groundwater sampling result collected from monitoring well OW-2 in August 1998 was not considered or mentioned in the risk characterization of the RAO statement. The RAO was based only on the lower November 1998 sampling result.

- Category GW-1 standards applied to groundwater at the site because the site was located within a DEP-approved Zone II. The LSP should not have submitted the 1998 RAO because vinyl chloride was present in groundwater at concentrations exceeding GW-1 standards.

- The RAO opinion relied on an Activities and Use Limitation (AUL) that restricted the use of groundwater in a GW-1 area, in violation of the MCP.

- The RAO statement used the wrong dilution factor (0.01 instead of 0.1) to estimate a concentration of vinyl chloride in indoor air based on current groundwater concentrations, and to calculate Method 2/GW-2 standards for vinyl chloride in groundwater.

- The RAO statement also included a mathematical error in the calculation for the indoor air concentration associated with the one-in-a-million risk. This error coupled with the use of the wrong dilution factor incorrectly resulted in the calculation of a Method 2/GW-2 standard greater than the concentration of vinyl chloride detected in groundwater at the site. Had the calculations been done correctly, the calculated GW-2 standard would have been less than the concentration detected at the site. Therefore, the incorrect calculations resulted in a determination that a condition of 'no significant risk' existed at the site when, in fact, no such condition had been achieved.

On May 23, 2003, the LSP submitted a second RAO statement for the site. This statement was a Class B-1 RAO and did not rely on an AUL. DEP did not audit the 2003 RAO statement. The Board found the LSP's work in regard to the 2003 RAO submittal was deficient in the following ways:

- The 2003 RAO statement was based on only two rounds of groundwater sampling collected only two months apart.

- The groundwater samples were not analyzed for Extractable Petroleum Hydrocarbons (EPH), Polychlorinated Biphenyls (PCBs), or metals, even though the LSP indicated in the RAO statement that a waste oil tank at the site may have leaked.

- The LSP did not indicate the location of replacement well OW-2R on any site maps in the RAO statement and, therefore, it was impossible to determine whether the replacement well was installed in the same location as original well OW-2. The RAO statement indicated that original well OW-2, where concentrations of vinyl chloride had been detected in groundwater above applicable standards, had been destroyed by roadwork sometime after submission of the 1998 RAO statement.

- The LSP conducted insufficient soil assessment. No soil samples were submitted for laboratory analysis. Some soil samples were collected from the auger flight and field screened which did not meet the standard of practice at the time.

- No surface water sample was collected from the brook adjacent to the site and no technical justification was provided in the RAO statement for not collecting a sample. These actions violated the MCP.

Site C

Site C was a commercial property comprised of a vacant 22,000 square foot lot. The property was partially paved with asphalt and had a two-story vacant building and storage shed. The property had been part of a railroad yard and station, and a portion had also been previously used to support the operation of a gasoline service station. A tidal influenced river flowed along the northern border of the property and a railroad traversed the northern edge of the property next to the river.

The property was permitted for on-site storage of up to 160,000 gallons of petroleum product consisting of primarily #2 fuel oil and gasoline. Historical records indicate the removal of a total of 12 underground storage tanks (USTs) and three above-ground storage tanks (ASTs) from the property. A majority of the USTs were removed from the property between 1995 through 1998. The LSP's firm removed two USTs in February 2000.

A Release Tracking Number (RTN) was issued by DEP in 2000 for the area where the LSP's firm had excavated two USTs. This RTN resulted from the reporting of a 72-hour release notification condition relative to volatile organic compound (VOC) concentrations above 100 ppm detected during headspace analysis. A second RTN was issued by DEP in 2000 regarding petroleum contamination detected in soil and groundwater above reportable concentrations in the northwest corner of the site.

In August 2000, the LSP filed a Class B-2 RAO with DEP. The RAO statement was based upon a Method 3 risk characterization, and addressed both RTNs issued for the site. The LSP did not define the disposal site boundary in the RAO statement but the statement appears to address the entire property. DEP did not audit the RAO statement.

The Board found the LSP's work in regard to the RAO statement was deficient in the following ways:

- In the risk characterization portion of the RAO statement, the LSP averaged soil data taken from seven different soil samples that were collected at different locations, different depths and different source areas to calculate soil Exposure Point Calculations (EPCs) for the entire half-acre site. Similarly, the LSP averaged groundwater data collected in 1999 and 2000 from different source areas across the site. Also, some of the concentrations that were averaged were above applicable Method 1 standards and were several orders of magnitude higher than others, resulting in underestimating the EPCs. The Board believed this averaging was inappropriate and violated the MCP.

- The LSP stated in the RAO statement that groundwater classification GW-2 did not apply to the site because the depth to groundwater was greater than fifteen feet. Data in the report indicated that the depth to groundwater in one well was less than 15 feet and, therefore, GW-2 would apply. This error was significant because: several EPCs exceeded GW-2 standards and the risk characterization did not evaluate the risks from dermal contact with groundwater based on the assumption that depth to groundwater was more than 15 feet below grade.

- A table in the risk assessment indicates that the incorrect dilution factor (0.01 instead of 0.1) was used to model indoor air concentrations in the on-site building in violation of 310 CMR 40.0983. Because the wrong dilution factor was used, the subsequent calculation of Hazard Index was incorrect by a factor of 10 (0.575 instead of 5.75) and a condition of "no significant risk' had not been achieved at the site.

- The LSP did not consider polynuclear aromatic hydrocarbons (PAHs) in his risk characterization as he should have in light of the fact that PAHs had been detected in soil and groundwater at the site. The LSP also failed to discuss in his RAO statement the soil and groundwater results that indicated the presence of PAHs. The LSP also did not consider VOCs in his risk characterization even though they were detected in groundwater from a monitoring well (AB-5) at the site.

- The LSP did not define the horizontal extent of contamination beyond MW-8 even though contamination had been detected in groundwater in this well at concentrations above applicable Method 1 standards.

- The LSP did not collect a surface water sample from the nearby river even though the applicable Method 1 GW-3 standard was exceeded in MW-8. The LSP provided no technical justification in the RAO submittal for failing to collect a surface water sample. These actions violated the MCP.

- The LSP did not install a groundwater monitoring well in an appropriate location relative to excavation of the two USTs removed from the site in 2000. According to the site maps included in the RAO statement, the single groundwater monitoring well located in the vicinity of the excavation (MW-6) was located cross-gradient of the former UST area and on the north side of the excavation despite the fact that the highest concentrations of contamination had been found in soils located on the west side.

- The soil sampling analysis was not adequate to determine the nature and extent of soil contamination at the site. For instance:

    - While the LSP stated in the RAO opinion that the soil samples selected for laboratory analysis were the ones with the highest headspace readings, the analytical data indicates this is not true. Several of the soil samples selected for analysis had the lowest headspace readings.
    - The LSP did not submit any soil samples for analysis from boring B8/MW8 (the most downgradient boring) even though headspace readings of greater than 1000 parts per million (ppm) and 305 ppm were recorded at different depths in that boring.
    - No soil borings were placed near some other potential source areas at the site.

- The LSP did not collect sufficient groundwater data to evaluate seasonal variations in groundwater quality.

Site D

Site D was a residential lot, approximately 26.89 acres, with a residential dwelling that had a full basement and two floors. On November 9, 2000, a UST was removed from the yard of the residence and was replaced by two 330-gallon ASTs that were placed in the basement. On November 13, 2000, 521 gallons of fuel oil was delivered to the basement of the residence that resulted in a release because a copper return line from the oil burner to the recently removed UST had not been sealed.

Another LSP was initially involved at the site and excavated approximately 85 cubic yards of contaminated soil on November 21, 2000. In April 2001, the LSP was hired to remove the 85-cubic yards of stockpiled soil that still remained on site, and became the new LSP-of-Record.

In November 2002, the LSP filed a Class A-2 RAO report with DEP regarding the fuel oil release. The RAO report was not audited by DEP. The Board found the LSP's work in regard to the RAO statement was deficient in the following ways:

- Well MW-2A was installed in January 2002 as replacement for well MW-2 that had been destroyed by excavation activities. Based on the groundwater flow sketch included in the RAO report, well MW-2A was installed side gradient of the location of former well MW-2. Therefore, the Board found that the LSP had not collected sufficient data to adequately determine whether non-aqueous phase liquid (NAPL) and or/dissolved petroleum had migrated beyond the excavated area on site.

- The two site figures included in the RAO statement are inconsistent regarding the location of groundwater monitoring wells MW-5 and MW-6. As a result, the actual location of these wells is unclear, and the accuracy of the LSP's groundwater flow direction calculation is questionable.

- The Board found that the LSP did not collect adequate groundwater data. Monitoring well MW-5 was sampled only once and MW-6 was sampled only twice.

- The Board found that the LSP failed to recognize a potential Critical Exposure Pathway/ Condition of Substantial Release Migration that required reporting within 72 hours. The reportable condition was related to the discovery of petroleum hydrocarbons in sub-slab and indoor air sampling results from samples collected within the residence by the LSP in October 2001 and June 2002.

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LSP Board Complaint Numbers 02C-02

VOLUNTARY SURRENDER OF LICENSE

On December 31, 2006, pursuant to an Administrative Consent Order ("ACO"), the LSP voluntarily surrendered his/her LSP license. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of law or regulation but agreed not to contest the Board's findings and agreed to voluntarily surrender his/her LSP license. Under the terms of the ACO, the LSP is prohibited from reapplying for an LSP license for a period of five years. This action resulted from a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP").

Summary of Findings

Based on a preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

309 CMR 4.02(1), by failing to act with reasonable care and diligence in regard to the two sites and the four Response Action Outcomes ("RAOs") discussed below. Examples of conduct by the LSP that violated this regulation included, without limitation, the following:

(a) In the case of **Site A**, the LSP:

- failed to address all potential contaminants of concern (Release 1);
- failed to identify or assess all potential sources of contamination (Releases 1 and 2);
- failed to identify or assess all potential receptors (Releases 1 and 2);
- incorrectly performed a Method 1 Risk Characterization (Release 1);
- failed to provide adequate technical justification for exempting Site A from a GW-1 categorization (Release 1);
- failed to identify or assess the GW-3 groundwater categorization (Release 1);
- failed to identify the boundaries of the RAO (Releases 1 and 2);
- incorrectly classified the RAO as A-1 (Release 1);
- failed to adequately assess the extent of groundwater contamination (Release 2); and
- incorrectly conducted a Method 2 Risk Characterization (Release 2).

(b) In the case of **Site B**, the LSP:

- failed to address all potential contaminants of concern (Releases 1, 2, and 3);
- failed to identify or assess all potential receptors (Releases 1, 2, and 3);

- incorrectly performed a Method 1 Risk Characterization (Releases 1 and 2);
- incorrectly calculated Exposure Point Concentrations (Releases 1 and 2);
- failed to compare contaminant concentrations in soil to Method 1 S-1 Standards to assess future use (Releases 1 and 2);
- failed to identify on a site plan the boundaries of the disposal site to which the RAO applied;
- failed to adequately assess the extent of groundwater contamination (Releases 1, 2, and 3);
- failed to use an appropriate soil-gas sampling technique (Release 3);
- failed to properly conduct a Method 2 Risk Characterization (Release 3);
- used scientifically invalid or indefensible data (Releases 1 and 2);
- submitted an inadequate IRA Status Report (Releases 1 and 2);
- failed to conduct an IRA in conformance with the IRA Plan (Releases 1 and 2); and
- failed to adequately assess groundwater flow direction (Releases 1, 2, and 3).

309 CMR 4.03(3)(b), by failing at both Site A and Site B to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

309 CMR 4.03(3)(c), by failing to make a good faith and reasonable effort to identify and obtain data regarding:

- in the case of **Site A**, all potential contaminants of concern (Release 1); all potential sources of contamination (Releases 1 and 2); all potential receptors (Releases 1 and 2); and the extent of groundwater contamination (Release 2).

- in the case of **Site B**, all potential contaminants of concern (Releases 1, 2, and 3); all potential receptors (Releases 1, 2, and 3); the extent of groundwater contamination (Releases 1, 2, and 3); and groundwater flow direction (Releases 1, 2, and 3).

309 CMR 4.03(3)(d), by, failing to disclose and explain in the Waste Site Cleanup Activity Opinion material facts, data, and other information known by him or her that may have tended to support or lead to an opinion contrary to, or significantly different from, the one expressed: namely, the identification and assessment of all potential receptors (Site A, Releases 1 and 2; Site B, Releases 1, 2, and 3).

Background of Case

Facts Related to Site A

The property at Site A was in a mixed residential and commercial area. Hydrologically, the site was located within a Massachusetts Potentially Productive Aquifer ("PPA") and a United States Environmental Protection Agency ("EPA") Sole Source Aquifer until September 9, 1996, when MassDEP promulgated regulation revisions resulting in the reclassification of the area in which the site was located as a Non-Potential Drinking Water Source Area.

On the site was a two-story, brick, municipal garage containing two floor drains, which discharged to a dry well. Residences with basements abutted the site to the southwest and north. The site and surrounding properties were serviced by municipal water. Groundwater was reported at a depth of approximately 10.5 feet below ground surface, flowing toward the northeast. Two releases were documented at the site, and the LSP submitted two separate RAOs to MassDEP. The first RAO was submitted in April 1996. In July 1997, the LSP received a Notice of Audit Finding ("NOAF") for the first RAO. This NOAF cited multiple violations of 310 CMR 40.0000, the Massachusetts Contingency Plan ("MCP"). The RAO for the second release was filed with MassDEP in January 1998, six months after the LSP received the NOAF pertaining to the first RAO.

Release 1

During a Phase I environmental site assessment, completed by the LSP's firm in February 1995, gasoline constituents were detected in two soil samples collected in an area where an underground storage tank ("UST") had been removed in December 1990. Gasoline was identified in soil at 2,420 and 1,840 mg/Kg, above the S-1 Reportable Concentration ("RC") in effect at that time for Total Petroleum Hydrocarbons, which was 500 mg/Kg. The LSP's firm reported this release to MassDEP in May 1995, enclosing the Phase I report with the notification.

In October 1995, the LSP submitted a Release Abatement Measure ("RAM") Plan that documented the results from the Phase I environmental site assessment and proposed excavation and off-site disposal of contaminated soil. According to the RAM Plan, benzene, naphthalene, and PCE were detected in groundwater at Site A at levels above the applicable GW-1 RCs.

Although the RAM Plan identified PCE above reportable concentrations in groundwater, no potential sources for PCE or any other chlorinated volatile organic compound ("VOC"), such as the floor drains and dry well, were assessed or discussed in the RAO filed for Release 1. Further, the site plan in the RAO did not show the locations of the floor drains or the dry wells. During the Board's investigation, the LSP stated that s/he did assess the floor drains for gasoline and gasoline intrusion into the building, but did not test for PCE.

In the RAM Plan, the LSP determined that the GW-1 classification was not applicable to Site A because, s/he said, none of the GW-1 criteria applied. Further, the LSP stated that "[w]hile the [aquifer] is a highly productive aquifer, and includes a 140 square mile area, the subject site is located approximately 340 feet from [the harbor]. Additionally, there is

an estimated hydraulic gradient of 0.004 toward [the harbor]." This technical justification for dismissing the applicable GW-1 groundwater classification did not conform to the applicable exemption requirement clearly outlined in the MCP at 310 CMR 40.0932(5)(b), which requires evidence that the groundwater in question is either (1) not located within the true boundary of the PPA or (2) brackish, or has high levels of metals, such that the development of the aquifer as a public water supply would be technologically or economically infeasible. During the Board's investigation, the LSP acknowledged that in April 1996, when the RAO was submitted for Release 1, the groundwater was within a PPA.

In late November 1995, an 11-foot-deep excavation was completed at the former UST location. A total of 120 cubic yards of soil were removed from the site. No post-remedial groundwater samples were collected. In particular, no samples were collected to assess the effect of soil excavation on benzene and naphthalene levels in groundwater.

In April 1996, MassDEP received a Class A-1 RAO signed by the LSP. In the RAO, the LSP classified groundwater as GW-2 because of the presence of two occupied dwellings within 30 feet of the site. The locations of these dwellings were not identified or discussed in the RAO. Furthermore, the locations of northerly abutting residential properties identified in the Phase I report as having basements, and as potential receptors of gasoline vapors, were not identified or discussed in the RAO. Soil was classified in the RAO as S-1 because the property was for sale and, therefore, the reasonably foreseeable property use was unknown.

The Method 1 Risk Characterization in the RAO compared the concentrations of the contaminants of concern to MCP Reportable Concentrations instead of Method 1 Standards. During the Board's investigation, when the LSP was asked why the Risk Characterization was conducted by comparing analytical results to Reportable Concentrations, s/he acknowledged that doing so was not appropriate.

The RAO was incorrectly classified as a Class A-1 RAO. The evidence provided in the RAO indicated that the concentrations of oil and hazardous material remaining at Site A had not been reduced to background levels.

Release 2

In September 1997, as a result of the installation and sampling of an on-site monitoring well by another consultant, MassDEP was notified of a new reportable condition at Site A: the presence of 13 inches of gasoline non-aqueous phase liquid ("NAPL") in the new monitoring well.

In October 1997, the LSP's firm installed a total of nine microwells across the site, screened across the water table, and two days later eight of the wells were sampled. One sample (B-9) was found to contain C5-C8 Aliphatics at a concentration (1,300 µg/L) above the GW-2 RC for this fraction (1,000 µg/L) that was to become effective on November 1, 1997.

On October 24, 1997, MassDEP sent a letter to the Potentially Responsible Party (”PRP”), the municipality, requesting that the PRP do the following: (1) submit an Immediate Response Action (“IRA”) Plan; (2) retract the RAO for Release 1 within ten days; (3) continue response actions until a condition of No Significant Risk is achieved at the Site; and (4) submit a new RAO or Tier Classify the Site by January 12, 1998.

In November 1997, as part of the resulting IRA, 80 cubic yards of soil were excavated from the area where the NAPL had been observed.

Once the aforementioned excavation had been backfilled, two new microwells were advanced within the former excavation grave, and these wells (along with three pre-existing wells) were sampled and analyzed for Volatile Petroleum Hydrocarbons (“VPH”) and benzene, toluene, ethylbenzene, and xylene (“BTEX”). These post- remedial groundwater results indicated that there were C5-C8 Aliphatics present above the Method 1 GW-2 and GW-3 Standards of 1,000 µg/L and 4,000 µg/L, respectively. Groundwater sampling results also showed the presence of C9-C12 Aliphatics above the Method 1 GW-2 Standard of 1,000 µg/L.

In January 1998, MassDEP received a revised Class A-2 RAO, signed by the LSP, which stated that VPH fractions had been detected above the Method 1 GW-2 and/or GW-3 standards in groundwater samples from two wells, designated as B-7 and B-13. The LSP acknowledged during the Board’s investigation that well B-7 appeared to be downgradient of Release 2 and that analysis of groundwater there had detected concentrations of contaminants above Method 1 groundwater standards. No groundwater wells were placed on the property downgradient of B-7 or B-9 (in which some hydrocarbon fractions exceeded Method 1 GW-2 and/or GW-3 Standards) to assess the extent of the release.

As with the first (1996) RAO, the second (1998) RAO did not provide the locations of or discuss potential impacts to the abutting residences identified in the Phase I report as having basements, nor did it identify or discuss potential impacts to a commercial/retail building immediately abutting and downgradient from the Site A property.

The floor drains and dry well at Site A were not assessed, discussed, or located on the site plan in either the first or second RAO filed for the Site.

The 1998 RAO discussed the off-site extent of contamination and downgradient impact to groundwater based on analytical results from wells previously placed and sampled in 1996 by another consultant investigating a separate polycyclic aromatic hydrocarbon (“PAH”) release on the downgradient northeastern abutting property. According to the 1998 RAO, analysis of the groundwater at the downgradient property had not detected any VOCs, TPH, or PAHs. However, no analytical reports, well construction information, or well location information to support these statements were provided in the 1998 RAO or otherwise specifically referenced. During the Board’s investigation, the LSP acknowledged that s/he had used the other consultant’s data from monitoring wells

located on the adjacent downgradient property to determine the extent of contamination at the Site. However, when asked to identify the well locations on the adjacent property that s/he used to determine the extent of groundwater contamination from the Site, the LSP could not identify those locations.

In the 1998 RAO, residual post-excavation soil contamination results identified in samples from the east wall and bottom of the excavation were compared to the Method 2 Direct Contact Standards. No technical justification was provided to explain why the soil contaminants would not leach into the groundwater, despite the fact that the analytical data indicated that groundwater had indeed been impacted. When asked during the Board's investigation about the appropriateness of comparing soil results to Direct Contact Standards at a site with identified groundwater impacts, the LSP acknowledged that doing so was incorrect.

The boundaries of the disposal site to which the 1998 RAO applied were not identified on a site plan. This issue was identified as a deficiency in the NOAF for the 1996 RAO for Release 1, yet it was not addressed in the revised 1998 RAO.

Facts Related to Site B

The property at Site B was abutted to the north and south by residential properties, to the east by undeveloped land, and to the west by an ambulance repair station. The on-site, one-story Department of Public Works ("DPW") building and abutting residential structures were serviced by municipal water. The site was the central fuel depot for the municipality's vehicles, and the building was constructed on a cement slab. Three releases of oil and/or hazardous materials occurred at Site B.

Releases 1 and 2

In October 1998, a release was reported to MassDEP due to soil headspace readings over 100 parts per million ("ppm") during the removal of a 5,000-gallon gasoline UST and a 2,000-gallon Number 2 fuel oil UST by the previous LSP-of-Record for Site A. Since the two tanks were spatially separated on the property, two separate MassDEP Release Tracking Numbers ("RTNs") were assigned to this Site. The tanks were being removed as part of two verbally approved IRA Plans, which also proposed soil removal, soil borings and well construction, and soil and groundwater analyses for EPH, VPH, BTEX, MTBE, and PAHs.

Approximately 100 cubic yards of soil were removed under the supervision of the previous LSP-of-Record from the gasoline release location, and approximately 60 cubic yards of soil were removed from the fuel oil release location. Groundwater was encountered at approximately 13 feet bgs at the gasoline release excavation and 8 feet bgs at the fuel oil release excavation. Post-excavation sidewall and bottom soil samples were collected from each excavation. The excavations were then lined with polyethylene and backfilled.

Under the previous LSP-of-Record, post-excavation soil samples for the gasoline release were analyzed for VPH, BTEX, and MTBE. The results detected in excess of the Method 1 S-1/GW-1/2/3 Standards (100 mg/Kg) were as follows: VPH C5-C8 Aliphatics at 167mg/Kg and VPH C9-C10 Aromatics at 152 mg/Kg.

Under the previous LSP-of-Record, post-excavation soil samples for the fuel oil release were analyzed for EPH, VPH, and PAHs. None of the results were above the applicable Method 1 S-1/GW-1/2/3 Standards.

In the Spring of 1999, the LSP that is the subject of this Complaint was contracted to continue the IRA activities. Seven borings were completed. Two borings were at the immediate and assumed downgradient end of the fuel oil tank grave (sampling locations MW-6 and B-7), and the others were northwest of the gasoline tank grave, upgradient of the fuel oil grave. Three monitoring wells were also completed, one at the immediate assumed downgradient edge of the former fuel oil excavation (MW-6) and two northwest of the gasoline tank grave (MW-2, MW-3). The wells were sampled three days after installation.

The approved IRA Plans prepared by the previous LSP-of-Record for Site B, and submitted as attachments to an IRA Status Report by the subject LSP, called for sampling soil and groundwater for EPH and PAHs, among others. No modified IRA Plan was submitted. The public record and MassDEP database provide no indication that written or oral IRA modifications were ever made.

The LSP's firm analyzed soil and groundwater samples for VPH, BTEX, MTBE, and naphthalene. However, the soil and groundwater were not analyzed for either EPH or PAHs as part of the assessment of impacts from the fuel oil release.

During the Board's investigation, when the LSP was asked why analyses of EPH and PAHs were not performed at Site B as specified in the approved IRA Plans, s/he first replied that if EPH/PAH analysis was included in the IRA Plans, then that analysis should have been conducted or the plans should have been modified. The LSP added that, by all indications, the release was relatively fresh and, therefore, would best be characterized by VPH analysis. The LSP further stated that, in his/her opinion, PAHs from a fresh release would not likely be present at levels above the relevant standards. The LSP also claimed that the "regulations allow for the elimination of EPH/PAH analyses in a fresh release of fuel oil." The LSP agreed that s/he did not explain in the RAO why EPH and PAH analyses were not done.

VPH results from soil samples collected on April 30, 1999, revealed C9-C10 Aromatics at 117 mg/kg, above the Method 1 S-1 Standard (100 mg/kg) in boring B-7, adjacent to the fuel oil tank grave.

VPH analysis of groundwater samples collected from monitoring well MW-6 (downgradient of the fuel oil tank grave) on May 3, 1999, contained C9-C12 Aliphatics at 1,180 µg/L, above the Method 1 GW-2 Standard (1,000 µg/L). Monitoring well MW-6

was the only well resampled in July 1999. At that time it contained C9-C12 Aliphatics at 950 µg/L. Therefore, the temporal average of the two readings for this well was 1,065 µg/L. No wells were placed or located downgradient of monitoring well MW-6.

In June 1999, the LSP submitted a one-paragraph IRA Status Report, "per the Immediate Response Action (IRA) Plan which was prepared by [the previous consultant]," stating that three monitoring wells had been installed, and that soil and groundwater samples had been collected. Additional soil sampling was proposed. The previous LSP's IRA Plans were attached. The IRA Status Report did not include a detailed description of the field activities, a site plan, soil boring logs, well logs, headspace results, soil classification data, or the available soil and groundwater analytical data generated approximately six weeks earlier.

In July 1999, four additional test pits were dug in and around the former fuel oil excavation. Soil samples were collected and analyzed for VPH, BTEX, MTBE, and naphthalene. An analysis was not conducted for EPH fractions and target PAH analytes.

In October 1999, MassDEP received a combined IRA Completion Report and Class A-1 RAO, signed by the subject LSP, for both RTNs for Site B. This RAO was submitted two years and three months after the LSP received the NOAF (noted above) for Site A.

In this RAO, the (temporal) average exposure point concentration ("EPC") for monitoring well MW-6 was 1,065 µg/L for C9-C12 Aliphatics, above the Method 1 GW-2 Standard of 1,000 µg/L. The RAO stated, "Exposure point concentrations for groundwater at MW-6 is above Method 1 Risk Characterization for C9-C12 Aliphatics standards [sic]. As such, a condition of 'No Significant Risk' does not exist for groundwater in the vicinity of the release at the Site."

The RAO also stated, "Based on the laboratory results for groundwater, the concentration [of the C9-C12 fraction] has decreased, and a condition of 'No Significant Risk' does not exist for groundwater at the Disposal Site's 2,000-gallon fuel oil tank grave. … The fraction's decrease is assumed to be from natural attenuation, which will presumably continue to decrease the concentration to support a condition of 'No Significant Risk'." No groundwater monitoring wells were placed between monitoring well MW-6 and the northerly abutting residential property.

The RAO also stated, "To account for current and future uses of soil at the Site, the detected concentrations in soil are compared to the applicable S-3/GW-2 standards to determine whether a condition of 'No Significant Risk' currently at the Site [sic]." The RAO compared soil EPCs to Method 1 S-3/GW-2 Standards and concluded: "No Significant Risk exists for current and future uses of soil at the Site."

In the RAO for Site B, the locations of abutting residential properties were not shown on a site plan, nor were they assessed as potential receptors of groundwater contamination.

In the RAO, the LSP determined that the "general flow" of groundwater was to the west, based on the observation of topographical features such as a low wetland area to the west of the Site and a bedrock outcrop 20 to 30 feet high immediately to the north of the Site. The RAO also stated that based on groundwater elevation data from three on-site wells (MW-2, MW-3, and MW-6), groundwater flow at the site was determined to be toward the north and west. However, the wells used to make this determination lay in almost a straight line.

The risk characterization depended, in part, on data that were determined by the laboratory to be outside of the allowable internal standard parameters. The surrogate recovery for the analytical run for the soil sample from boring B-7 was outside acceptable parameters. The surrogate recoveries for the soil sample from one of the borings placed northwest of the gasoline grave (boring B-4), and most likely downgradient of the grave, were also outside acceptable parameters. The laboratory noted that samples were received at 13.2 degrees Centigrade (56 degrees Fahrenheit), indicating that the samples had not been kept cold. The RAO did not address these issues.

During the Board's investigation, the LSP stated that it is clear that the categorization of the 1999 RAO as Class A-1 was an inadvertent error, "as the infeasibility of restoring the Site to background was presented" in the RAO Report. The evidence provided in the RAO indicated that the levels of oil and hazardous material at Site B had not been reduced to background.

The RAO for Site B classified groundwater as GW-2 but not as GW-3, even though this issue had been raised more than two years earlier in the NOAF for Site A. During the investigation, the LSP acknowledged that the RAO Report for Site B should have more clearly indicated that groundwater concentrations were also compared to the GW-3 Standards, since all groundwater in the state is considered GW-3.

In the RAO, the LSP calculated the soil EPC as the average of analytical results from borings and test pits, but s/he did not include the UST post-excavation soil results. An explanation for excluding this latter data was not provided in the RAO.

Release 3

On March 3, 2000, MassDEP received notification from the municipal Fire Department of the presence of #2 fuel oil in a catch basin located in the front of this same DPW building, resulting in the issuance of a third RTN for this property.

Upon arrival at the site, the MassDEP representative, meeting with the LSP's project manager, noted that the oil had come from a return supply line. This line was pressurized and leaked when the boiler was "fired up." The line originated from a 2,000-gallon UST located in the rear of the DPW building. The RAO stated that the results of a tightness test, conducted on March 6, 2000, indicated that the return line had been damaged.

The release impacted a storm drain running west under the building to the catch basin referred to above, allowing NAPL to discharge into a nearby river. Absorbent booms were spread across the outfall at the river, and at least one catch basin was pumped.

In late March 2000, MassDEP received an RNF, an IRA Plan, an Imminent Hazard Evaluation identifying an Imminent Hazard, and a Transmittal Form. The IRA Plan proposed to continue monitoring the booms "to prevent the release of NAPL to surface water, causing an imminent hazard," to excavate soils, to investigate the extent of the release, and to probe the storm drain line under the building with a camera to determine where the oil had entered the drain.

In the course of conducting the IRA, the LSP advanced five borings through the DPW building floor, reportedly encountering bedrock at 2.5 to 3.5 feet below the slab. No groundwater was encountered. The LSP submitted soil samples from the borings to a lab for VPH, BTEX, MTBE, and naphthalene analysis. Low levels of VPH, ethylbenzene, and xylene were detected in boring B-3. All other results were non-detect ("ND"), with the exception of one result well below the standard.

In July 2000, approximately four and a half months after the release, the LSP submitted an IRA Completion Report and Class A-1 RAO, which stated that the release had entered a portion of the French drain system and a perforated storm pipe, ultimately discharging into the adjacent river.

The RAO stated that since a soil gas result from sampling location B-3 (36.2 ppmV) was below MassDEP's 1997 draft VPH/EPH guidance document action level of 40 ppmV, an impact to indoor air was unlikely. However, this conclusion was based upon the result of a jar headspace screening rather than the soil gas screening method recommended in the VPH/EPH guidance document, i.e., that soil gas be drawn from probes installed just beneath the slab into a Tedlar (or equivalent) bag or into equipment that allows continuous, real-time measurements.

The LSP also collected three two-hour Summa canister indoor air samples within the working area of the building. The results were analyzed for VPH, BTEX, MTBE, and naphthalene. When all three sample results showed concentrations of the VPH fractions well in excess of the Estimated Background Indoor Air Concentrations identified in MassDEP's draft VPH/EPH guidance document, the LSP used the Method 1 GW-2 Standards, site-specific information, and Henry's Law to back-calculate "allowable" indoor air concentrations for direct comparison to the indoor air results. The RAO stated that the indoor air sampling results were compared to, and found to be less than, the LSP's own derived indoor air standards. The LSP termed this a Method 2 Risk Characterization and concluded that there was no risk from indoor air. However, it was a violation of the MCP (310 CMR 40.0981) for the LSP to use a Method 2 Risk Characterization to establish indoor air standards. Furthermore, the calculations and site-specific assumptions were not provided in the RAO Report.

When asked during the investigation how the relevant regulations or policies justified the calculation of site-specific indoor air standards, the LSP replied that the Method 2 calculations did not belong in the RAO Report, nor did the table comparing indoor air results to site-specific calculated indoor air standards. The LSP then said that a Method 2 was not necessary because the site met Method 1 Standards.

The Summa canister indoor air results were also compared to Occupational Safety and Health Administration ("OSHA") Standards in the RAO Report. When questioned during the Board's investigation regarding the comparison of indoor air results to OSHA standards, the LSP stated that s/he uses OSHA standards for evaluating workplace exposures, but would certainly not use them for evaluating residential exposures under the MCP.

The RAO stated that groundwater conditions at Site B were not impacted by the release due to bedrock underneath the building acting as a barrier to prevent any petroleum from impacting the groundwater. However, no determination was made whether fuel oil had impacted the bedrock aquifer. The LSP did not sufficiently justify his opinion that the bedrock was acting as a barrier.

According to the RAO Report, the only groundwater sample results used in the risk characterization were collected from MW-2 and MW-3, located approximately 240 feet to the west of the release location. A monitoring well was not placed in the test pit adjacent to the tank, where groundwater was encountered at nine feet, or anywhere else in the general vicinity of the release.

Also, the soils and groundwater were not analyzed for EPH and PAHs, which are common constituents of fuel oil. When asked during the investigation how s/he determined which contaminants of concern were appropriate for assessing the extent of contamination in groundwater at MW-2 and MW-3, the LSP said that the release was a fresh fuel oil release and, therefore, s/he had evaluated only VPH. The LSP stated that there was some justification for not analyzing for EPH because the two laboratory chromatograms of the oil samples collected from the catch basin and the river showed that the release consisted of VPH. After further questioning, however, the LSP conceded that, absent calibration data, the chromatograms were not conclusive as to the absence of EPH and that, in any case, the technical justification for not looking at EPH fractions was not included in the RAO.

The locations of abutting residential properties were not located on a site plan in the RAO, nor were they assessed as potential receptors of groundwater contamination.

During the investigation, the LSP acknowledged that his/her review of the RAO Report for the third release "was not a sufficient review."

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LSP Board Complaint No. 02C-001

PUBLIC CENSURE

On October 20, 2003, pursuant to an Administrative Consent Order ("ACO"), the Board issued a Public Censure and a $1,000 penalty to an LSP for violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any wrongdoing but agreed not to contest the Board's findings and accepted a Public Censure and $1,000 penalty.

This disciplinary action resulted from a complaint alleging that the LSP allowed an unauthorized Release Abatement Measure ("RAM") to occur for several days before DEP was first notified of the release, and is based on the determination by the Board that the LSP violated the following Board Rules of Professional Conduct:

> 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing; and
>
> 309 CMR 4.03(3)(b), which requires that an LSP follow the requirements and procedures set forth in applicable provisions of MGL c. 21E, and 310 CMR 40.0000.

Background of Case

This case involved the removal and replacement of three 30,000-gallon underground storage tanks ("USTs") at a hospital powerhouse facility. The tanks contained No. 6 fuel oil. The PRP's contractor ("contractor") began excavating soil to remove the tanks on May 8, 2000. The LSP's firm was overseeing the work done by the contractor pursuant to a contract entered into between the LSP's firm and the PRP. This contract required the LSP's firm to provide LSP services in the event such services were needed to address contamination at the site.

During the UST excavation on May 8, 2000, oil-contaminated soil was discovered at the site. Between May 8 and May 11, prior to notification to DEP, the contractor, with the knowledge of the LSP, excavated and stockpiled a total of approximately 750 cubic yards of contaminated soil at the site. The LSP participated in oral and electronic communications among the firm's personnel regarding the site on May 9, 10, and 12, 2000.

On May 11, the three USTs were removed from the excavation and transported to a disposal facility. The contractor also installed a dewatering well on May 11 and pumped approximately 5,000 gallons of oil-contaminated groundwater into a fractionation ("frac") tank.

It was not until May 12, 2000, that anyone from the firm contacted DEP to report the site conditions. The firm's staff person in the field ("Field Staffer") was designated to report to DEP. On May 12, the Field Staffer contacted DEP to seek retroactive approval of the work already conducted at the site and to obtain oral approval to conduct additional soil excavation at the site as an Immediate Response Action ("IRA"). DEP staff denied the IRA request. The Field Staffer then sought oral approval from the DEP to complete the excavation under a RAM as a continuation of a Limited Removal Action ("LRA"). DEP staff denied this request also and instructed the LSP's firm to submit a Release Notification Form and to stop work at the site until a written RAM Plan was submitted to and approved by DEP. According to a Notice of Responsibility sent by DEP to the PRP and dated July 12, 2000, DEP denied the Field Staffer's requests on the grounds that his requests were inappropriate and violations of the MCP may have occurred.

According to the Field Staffer's field notes, by 10:55 a.m. on May 12, 5,000 gallons of water had been pumped out of the excavation. A "Job Charges Report" shows that the LSP spoke with DEP on May 12 regarding this site and the preparation for the RAM Plan for the site.

The Field Staffer's understanding was that the LSP was in charge of making the decisions regarding MCP compliance and reporting with respect to this site.

The LSP had the authority within the firm to instruct the contractor to stop work and cease further excavation, and to report site conditions to DEP. While the LSP apparently believed that the discovered conditions should have been reported to DEP, no report to DEP was made before May 12, 2000, four days after the site conditions were initially discovered. By the time the Field Staffer made the report to DEP on May 12, 750 cubic yards of soil had been excavated and water was being pumped into a frac tank.

The LSP knew that, during the period from May 8 through May 11, no RAM Plan was prepared.

The LSP did not become LSP-of-Record for the site after it was reported to DEP. However, in accordance with his/her overall responsibilities within the firm, on and after May 12, 2000, the LSP was involved with the site by his/her participation in discussions regarding the RAM Plan and communications with DEP personnel.

The Board's Conclusions and Findings of Non-compliance

The Board found that oversight by an LSP was required under the MCP starting on May 8, 2000, when more than 100 cubic yards of contaminated soil had been excavated from the site. Furthermore, the LSP's firm was under contract with the PRP to provide LSP services during removal of the underground storage tanks if LSP services became necessary based on the conditions encountered, and such conditions were encountered on May 8, 2000.

The Board determined that the LSP participated in oral and electronic communications concerning the project after the excavation limits of an LRA were exceeded.

The Board determined that the LSP had an obligation to inquire as to how much contaminated soil was excavated and stockpiled on site when the Field Staffer related the discovery of oil-contaminated soil beginning on May 8, 2000.

The Board found that the LSP knew or should have known that more than 100 cubic yards of contaminated soil had been excavated and stockpiled on site, and contaminated groundwater removed, prior to May 12, 2000, without obtaining DEP approval.

The Board found that the LSP knew or should have known that an unauthorized RAM was being conducted at the site.

The Board found that the LSP had the authority within the firm to instruct the contractor to stop the project and cease excavation activities at the site.

The Board determined that the LSP's activities during the period from May 8th through at least May 12th, constituted Professional Services with respect to the release conditions at the site and the response actions taken during that period of time.

The Board found that the LSP took no action to notify the firm's client (the PRP) concerning the discovered conditions, did not notify DEP, did not request DEP approval of response actions, did not require the firm's personnel to prepare a RAM Plan, did not instruct the contractor to stop the excavation, did not advise the firm's personnel to instruct the contractor to stop the project and cease the excavation, and did not take any actions necessary to keep the project in compliance with the MCP until May 12, 2000, when the excavation of contaminated soil exceeded the limits for an LRA. On the bases of the agreement between the PRP and the LSP's firm, the LSP's position within the company, and the information provided to the LSP on and after May 8, 2000, the LSP was responsible for overseeing and participating in an unauthorized RAM.

The Board, therefore, determined that the LSP violated the following provisions of the MCP[1]:

> 310 CMR 40.0318(4)(a), which provides that an LRA shall be restricted to the excavation and off-site recycling, reuse, treatment, and/or disposal of not more than 100 cubic yards of soil contaminated by a release of oil or waste oil with measured concentrations of oil equal to or greater than an applicable Reportable Concentration.

[1] All of the alleged conduct at issue in this case occurred prior to June 2003, when 310 CMR 40.0318(9) and 310 CMR 40.0443(2) were amended to eliminate the DEP approval requirement. For purposes of this Web Site Summary, citations to regulations refer to the citations as they appeared at the time the alleged conduct occurred.

310 CMR 40.0318(9), which provides that where volumes of excavated contaminated soil exceed the limits specified in 310 CMR 40.0318(4), the DEP shall be notified of the release and the person conducting the LRA shall either cease the remedial actions or obtain approval from DEP to continue the removal action as a RAM.

310 CMR 40.0443(1), which provides that a RAM shall not be conducted until a complete RAM Plan has been submitted to and received by the DEP.

310 CMR 40.0443(2), which provides that a RAM shall not be conducted until the DEP has either issued written approval of the RAM Plan or DEP has failed to issue written approval or denial of the RAM Plan within 21 days of receipt of the plan.

By violating the above provisions of the MCP, the LSP also violated the Board's Rule of Professional Conduct at 309 CMR 4.03(3)(b), which requires an LSP to follow the requirements of the MCP.

Based on all of the above, the LSP also violated Section 4.02(1), which requires an LSP to act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing practicing in the Commonwealth when providing Professional Services.

In the ACO the LSP, without making any admission of fact or law, agreed not to contest the Board's Conclusions and Findings of Noncompliance.

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LSP Board Complaint 01C-10

PROHIBITION ON REAPPLICATION

On March 12, 2007, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the LSP did not admit to any violation of law or regulation but agreed never to reapply for an LSP license. In January 2005, while the Complaint was still under investigation, the LSP chose not to renew his/her LSP license when it expired. The Board and the LSP entered into the ACO before the Board had completed an investigation of the pending disciplinary complaint.

In October 2001, the Massachusetts Department of Environmental Protection ("MassDEP") filed a complaint with the Board alleging that the LSP violated the Board's Rules of Professional Conduct by filing an LSP Opinion concluding that there was no significant risk remaining at a former plating facility. Specifically, MassDEP alleged that the LSP had failed to adequately characterize site conditions, failed delineate the extent

of contamination, and failed to assess the need for additional response actions in order to protect nearby residents from contamination that came to be located on their property. Subsequent involvement by MassDEP prompted the site owner to take additional steps to provide assurance that the site poses no significant risk.

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LSP Board Complaint 01C-06

PUBLIC CENSURE

On September 27, 2006, the LSP entered into an Administrative Consent Order ("ACO") with the Board to resolve a disciplinary complaint. Pursuant to the terms of the ACO, the Board issued a "Public Censure" against the LSP. The LSP did not admit to any professional misconduct.

This consent agreement resolved a complaint filed by the Massachusetts Department of Environmental Protection ("MassDEP") in 2001 that referred to work the LSP performed at several sites including an auto service facility. MassDEP alleged that in 2000 the LSP inadequately investigated the potential for additional sources of petroleum contamination at the site. The Board and the LSP entered into the ACO before the Board had completed its investigation of the complaint.

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LSP Board Complaint No. 01C-002

LICENSE SUSPENSION

On December 3, 2004, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the license of an LSP for a period of ninety-one (91) days for serious violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of any law or regulation but agreed not to contest the Board's findings and accepted a ninety-one (91) day suspension of his/her LSP license. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1) by failing to act with reasonable care and diligence in filing a Downgradient Property Status ("DPS") submittal that was inadequately supported;
- 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and

310 CMR 40.0000, including, without limitation, 310 CMR 40.0183; and

- 309 CMR 4.03(3)(c) by failing to collect sufficient on-site data to support a DPS submittal.

Background of Case

In September 1999, the LSP filed a DPS submittal for a 95-acre site that had been the location of a sand and gravel operation since approximately the 1920s. As of the date the LSP filed the DPS submittal, the site was located within an Interim Wellhead Protection Area and a draft Zone II of two active municipal water supply wells. Twelve residential properties served by private drinking water wells abut the site to the south and east.

In 1990, testing of the nearby municipal water supply wells revealed that they were impacted by chlorinated volatile organic compounds (CVOCS), principally trichloroethene (TCE), tetrachloroethene (PCE), and 1,1,1-trichloroethane (TCA). In November 1992, DEP tested four of the private residential wells that abut the subject site and found that the two wells were also contaminated by CVOCs, principally TCE, PCE and TCA.

On June 10, 1992, a Notice of Responsibility was issued by DEP to the site owners regarding an oil release in the southwestern portion of the site. In March 1993, a "Final Investigation Report" was filed by another environmental consultant stating that no further action was necessary regarding the oil release. In a letter dated April 2, 1993, DEP stated that the Department believed that additional investigations were necessary to determine whether the CVOCS found in the municipal wells and the nearby private wells originated from CVOC releases at the site. DEP stated that a more complete hydrogeological investigation of the site was required to determine whether ground water contaminant plumes were migrating off-site.

In October 1993, DEP issued a Notice of Response Action ("NORA") to the site owners indicating that, because they had not undertaken a hydrogeological investigation, the Department was going to initiate one. In response to the NORA, the site owners performed assessment activities in November 1993. On June 20, 1995, DEP issued a second Notice of Responsibility to the site owners stating that the Department had information regarding numerous releases of oil and/or hazardous materials at various areas of the property. DEP referenced alleged releases of paint, solvent wastes, hazardous materials used to clean trucks, and waste oil. DEP required the site owners to perform a Phase I Initial Site Investigation and recommended installation of ground water monitoring wells in certain areas, including in the southeast portion of the site near the residential wells that had been impacted by CVOCs.

On October 31, 1995, the LSP submitted a Phase I Report to DEP. No new monitoring wells had been installed at the site during the Phase I investigations. The LSP stated in the report that the site qualified for a Class A-1 RAO because no evidence

existed of a significant risk at the site. On December 6, 1995, DEP issued a NORA to the site owners stating that, because adequate investigations had not been carried out during the Phase I investigation, DEP was prepared to do the necessary work. The site owners subsequently agreed to conduct additional investigation and, in April 1996, the LSP submitted a supplement to the October 1995 Phase I Report. DEP determined that this report was also inadequate because it failed to identify migration pathways and exposure potential, and failed to adequately address all areas of concern.

In June 1996, the LSP installed four of five wells in the southeast portion of the site that had been agreed upon with DEP. CVOCS were detected in groundwater samples collected from three of the wells. Concentrations detected in two of the wells exceeded applicable MCP Reportable Concentrations. In August 1996, DEP requested access to the site to install additional groundwater monitoring wells due to the site owner's refusal to install what the Department considered an adequate number of wells and to identify adequately migration pathways and exposure potential.

In September 1996, the LSP submitted a Tier Classification Opinion and permit application. In the opinion, the LSP classified the site as Tier 1B. DEP stated that the Tier Classification Opinion was virtually identical to the October 1995 Phase I Report and deemed it unsuitable for Tier Classification. The DEP did not act on the Tier 1B permit application and instead, on November 25, 1996, issued a Notice to Commence Work on the site. In March 1997, DEP installed four monitoring wells in the southeast portion of the site. The highest concentration of TCE (1,700 ug/L) to date was detected in a ground water sample from one of the DEP-installed wells.

Based upon the results of the DEP investigation, DEP rejected the Tier 1B Permit Application and Tier Classified the site Tier 1A in June 1997. On September 3, 1997, the site owners signed a Tier 1A permit. According to both the MCP and the Tier 1A permit, a Phase II Report and, if applicable, a Phase III Report were due on September 3, 1999.

At a meeting with DEP on June 10, 1999, the site owners agreed to conduct additional Phase II work to further define the extent of CVOC contamination in the southeast portion of the site. An interim deadline of July 19, 1999 was given to complete the Phase II investigations. On July 19, 1999, the LSP submitted a report to DEP entitled "Interim Phase II Comprehensive Site Assessment." In the report, the LSP presented a conceptual site model ("CSM") that s/he said demonstrated that the source of the CVOCs detected in both the municipal drinking water wells and the private wells was not the subject site but rather an off-site source.

At an August 1999 meeting with DEP representatives, the LSP presented the CSM and stated that s/he believed the information presented in the Interim Phase II Report was sufficient for a Downgradient Property Status ("DPS") submittal. As recorded in a DEP file memorandum, DEP staff indicated that the LSP could file a DPS submittal if s/he believed that the submission met MCP requirements.

On September 3, 1999, the LSP submitted a report entitled "Phase II Comprehensive Site Assessment and Downgradient Property Status Submittal" to DEP. This report was filed on the deadline for the Phase II Report. In the DPS submittal, the LSP concluded that the source of the CVOC contamination found on the site was from an upgradient property and, therefore, his/her client did not have responsibility to carry out further investigations. The LSP also stated that the focus of further investigations should be at the upgradient property.

The LSP stated, in the DPS submittal, that a former electronics manufacturing facility ("former manufacturing site") located approximately 4,000 feet north of the site was the source of the CVOCs detected in the ground water at the site, in the municipal water supply wells and in the private residential wells. The LSP stated that the former manufacturing site was the source of the CVOC contamination even though that site had achieved Response Action Outcome status and had been audited by DEP.

In the DPS submittal, the LSP stated that contaminants previously detected in both cesspool sludges and ground water at the former manufacturing site accounted for all of the contaminants that had been found in the municipal wells. The LSP also stated that dichlorobenzene had been detected both in the municipal wells and in sludge at the former manufacturing facility but not at the subject site, in further support of his/her conclusion that the former manufacturing property and not the subject site was the source of the contamination in the municipal wells.

The LSP stated in the DPS submittal that no evidence existed indicating use at the subject site of significant quantities of any of the constituents detected in the municipal wells. The LSP added that, if a surface spill of any of these contaminants had occurred anywhere on the 95-acre subject site, it would have been detected considering the density of explorations and excavations that had been undertaken there.

In the DPS submittal, the LSP stated that the CSM explained all of the varied conditions observed in the region. In addition, s/he stated that no inconsistencies had been identified that could not be explained by the CSM. According to the CSM, contamination was migrating via the ground water from the former manufacturing site to the subject site. The CSM stated that the topography in the region supported the conclusion that contamination was migrating from the former manufacturing site to the subject site via bedrock fractures. According to the CSM, the same suite of contaminants was detected in ground water at both the former manufacturing site and the subject site and the ratios of the respective contaminants were similar at both locations. The LSP stated that this information was further support for the conclusion that contaminated ground water from the former manufacturing site was migrating to the subject site.

The LSP also stated that ground water flow direction had not been scientifically determined and that the lack of adequate derivation of ground water flow patterns in the region was a primary data gap. No fracture trace analysis of the bedrock at the subject site was done as part of the investigations undertaken at the site. In addition, no

monitoring wells were placed on the subject site near the border closest to the former manufacturing property.

On December 16, 1999, DEP issued a written denial of the DPS submittal stating that the submittal did not contain sufficient supporting information. DEP also stated in the denial letter that, until the flow paths the LSP alleged to run between the former manufacturing property and the subject site had been verified, it remained unclear whether overburden and bedrock ground water from the former manufacturing property was actually migrating onto the subject site. On April 17, 2001, DEP filed a complaint with the Board alleging, among other things, that the DPS submittal was based on inadequate data in violation of the MCP.

Conclusions of the Board

The Board found that the LSP's DPS submittal did not meet the requirements of 310 CMR 40.0183. More specifically, the Board found that the DPS submittal was not based on investigation and assessment actions of sufficient scope or effort, failed to adequately demonstrate that the site was not a contributing source of the CVOC contamination, and failed to adequately investigate ground water flow patterns in the area to substantiate the conclusion that contamination was migrating to the site from an upgradient property.

The Board found that insufficient data had been collected from the subject site to validate the CSM and, therefore, the DPS submittal was not adequately supported. For instance, the Board found that the LSP should have collected groundwater elevation data to confirm the direction of ground water flow between the former manufacturing property and the subject site, and should have used methods such as fracture trace analysis to confirm bedrock fracture patterns. The Board also found the LSP's suggestion in the DPS submittal that contaminant ratios substantiated the CSM to be unconvincing because the data did not clearly support this theory.

The Board found that some data from the site appeared to contradict the LSP's conclusions and that the LSP failed to adequately explain these apparent contradictions. For example, a TCE concentration of 1700 ug/l had been detected in a ground water monitoring well located in the southeastern portion of the subject site but the highest TCE concentrations detected at the former manufacturing site were much lower (92 ug/Kg in cesspool sludges and 23 ug/L in ground water). The Board found that, based on the comparatively high concentration found on the subject site and the fact that this area was approximately a mile away from the former manufacturing property, it was not reasonable for the LSP to conclude that the former manufacturing property was the source of the TCE found in the southeast portion of the site. Also, the LSP concluded in the DPS submittal that the contamination found in the southeast portion of the subject site was unrelated to a surface release but rather migrated up from the bedrock aquifer. Some data collected from this area of the site indicated higher concentrations at shallower depths in apparent contradiction to the LSP's conclusion. While the LSP has suggested

that this data was unreliable, the Board found that additional data should have been collected in this area to see whether it supported the CSM.

The Board also found that insufficient investigations had been undertaken on the 95-acre subject site to conclude that no area of the site was a potential source. The Board noted that data existed from only nineteen monitoring wells located over the entire 95-acre site, and that many of those wells were clustered in two distinct areas of the site. The Board also did not accept the LSP's conclusion that the contaminants found at the subject site were definitely unrelated to the sand and gravel operations at the site. The Board noted that the contaminants detected at the subject site were fairly common constituents of degreasing solvents and it would not be unusual, in the Board's opinion, for these contaminants to be related to gravel pit operations carried out at the site.

The Board also found that the LSP filed the DPS submittal with the specific intent to divert attention away from his/her client's property and to instead focus on the former manufacturing site. The Board was particularly concerned that the LSP filed an inadequate DPS submittal in this instance because the site had been designated a Tier 1A site, and was located near both residential drinking water wells and municipal water supply wells.

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LSP Board Complaint No. 01C-001

LICENSE REVOCATION

On November 8, 2004, pursuant to an Administrative Consent Order ("ACO"), the Board revoked the license of an LSP for a period of five years from the date of the signing of the ACO for serious violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of any law or regulation but agreed not to contest the Board's findings and accepted a Five-Year Revocation of his/her LSP license. Under the terms of the ACO, the LSP may not reapply to the Board for an LSP license for a period of five years from the date of the signing of the ACO.

This disciplinary action resulted from a complaint filed by the Department of Environmental Protection ("DEP"). In the Order to Show Cause served on the LSP, the Board described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds for discipline against the LSP.

The Board also determined that an imminent threat to public health or safety or the environment could result during the pendency of an adjudicatory proceeding in this case. Therefore, on July 1, 2004, the Board issued an order immediately suspending the LSP's license pursuant to 309 CMR 7.09. On July 8, and July 22, 2004, the Board conducted a hearing at which the LSP contested the necessity of the suspension. On July 26, 2004, the Board issued an Order reaffirming its decision to suspend the LSP's license pending the outcome of the adjudicatory proceeding.

Summary of Findings

In its initial investigation, the Board focused on four sites at which the LSP had provided LSP services. Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

309 CMR 4.02(1) for failing to act with reasonable care and diligence. Examples of conduct by the LSP that violated this regulation included, without limitation, the following:

(a) In the case of Site A, the LSP:

- filed a Class A-3 Response Action Outcome report ("RAO") based on implementation of an Activity and Use Limitation ("AUL") a full two years before the AUL was implemented;
- asserted in the RAO and the AUL Opinion that the AUL soil and asphalt barriers had been placed on the property when, in fact, they had not;
- placed an AUL on the site to justify a determination of "No Significant Risk", even though Exposure Point Concentrations ("EPCs") exceeded applicable Method 1 Standards;
- failed to address a potential imminent hazard condition at the base of utility poles along a right of way where PCB levels exceeded Upper Concentration Limits ('UCLs"); and
- failed to notify holders of easements in the AUL area of the potential risk of encountering lead and PCB contaminated soils left on the site.

(b) In the case of Site B, the LSP:

- filed a Class A-2 RAO despite the presence of MTBE in the source area groundwater at levels exceeding UCLs;
- failed to appropriately classify the groundwater at the site as GW-1;
- improperly used Direct Contact Exposure-Based Soil Concentrations at a site with groundwater contamination;
- inappropriately selected Natural Attenuation and "no further action" as remedial options as part of a Class A RAO.

(c) In the case of Site C, the LSP:

- filed a Class A-3 RAO despite the presence of PCE in groundwater and soil at levels exceeding UCLs;
- failed to determine an appropriate EPC by calculating the average concentration using soil samples that were primarily outside the disposal site;

- used detection limits for sampling indoor air that were far above the appropriate standards for determining indoor air impacts;
- improperly used NIOSH/OSHA standards to determine that indoor air at a residence did not pose a significant risk to health and safety;
- inappropriately selected Natural Attenuation and "no further action" as remedial options as part of a Class A RAO;
- signed, recorded, and relied upon an invalid AUL because the current property owner did not sign the Notice of AUL; and
- inappropriately used an AUL to justify a conclusion that a condition of "No Significant Risk" exists or has been achieved at a site where the EPCs exceed applicable Method 1 standards.

(d) In the case of Site D, the LSP:

- failed to demonstrate that a condition of "No Significant Risk" had been achieved using a Method 1 Risk Characterization due to significant exceedances of GW-2 standards within 30 feet of a residence;
- used detection limits for sampling indoor air that were far above the appropriate standards for determining indoor air impacts;
- improperly used NIOSH/OSHA standards to determine that indoor air at a residence did not pose a significant risk to health and safety; and
- inappropriately selected Natural Attenuation and "no further action" as remedial options as part of a Class A RAO.

309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 ("MCP"), including, but not limited to the following:

(a) In the case of Site A, the LSP:

- failed to demonstrate that a condition of "No Significant Risk" had been achieved using a Method 1 Risk characterization (310 CMR 40.0973(7));
- failed to determine the horizontal and vertical extent of contamination (310 CMR 40.0904(2)(a));
- filed a Class A-3 RAO approximately two years before the AUL was implemented (310 CMR 40.1036(3)(c));
- used an AUL to justify a conclusion that a condition of "No Significant Risk" exists or has been achieved at a site where the EPCs exceed applicable Method 1 standards (310 CMR 40.1012(2)(1) and (4);
- failed to notify easement holders that the AUL exists and the potential risk of encountering hazardous materials in the AUL area (310 CMR 40.1074 (1)(e)); and
- made a false, inaccurate, and misleading statement in the RAO submitted to the DEP with respect to the implementation of the AUL (310 CMR 40.0022).

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(b) In the case of Site B, the LSP:

- filed a Class A-2 RAO at a site where groundwater concentrations exceed UCLs (310 CMR 40.1036(5));
- failed to demonstrate that a condition of "No Significant Risk" had been achieved using a Method 1 Risk Characterization (310 CMR 40.0973(7));
- failed to properly categorize the groundwater at the site as GW-1 (310 CMR 40.0932(4) and (5)(d));
- improperly used Direct Contact Exposure-Based Soil Concentrations at a site with groundwater contamination (310 CMR 40.0985),
- failed to adequately determine the extent of groundwater contamination at the site (310 CMR 40.0904(2)(a));
- based conclusions regarding residential indoor air impacts on false, inaccurate, and misleading statements in the RAO (310 CMR 40.0022);
- failed to perform an adequate Phase III evaluation (310 CMR 40.0861).

(c) In the case of Site C, the LSP:

- submitted a Class A-3 RAO for a site with exceedances of UCLs in soil and groundwater (310 CMR 40.1036);
- failed to demonstrate that a condition of "No Significant Risk" has been achieved using a Method 1 Risk Characterization (310 CMR 40.0973(7));
- failed to determine an appropriate EPC by calculating the average concentration using soil samples that were primarily outside the disposal site (310 CMR 40.0926(3));
- failed to demonstrate that access by children is restricted or that such children are highly unlikely to be present on the property and, consequently, failing to categorize soils at the site as S-1 from five feet to fifteen feet (310 CMR 40.0933(4)(a)(4) and 310 CMR 40.0933(9));
- failed to determine the horizontal and vertical extent of contamination (310 CMR 40.0904(2)(a));
- made false, inaccurate, and misleading statements to the DEP (1) by failing to include Vinyl Chloride exceedances in groundwater in a summary table in the RAO, and (2) by failing to submit a PCE soil stockpile sample to the DEP that indicated that the stockpiled soil exceeded allowable permit levels at a recycling facility (310 CMR 40.0022);
- failed to submit accurate information required in a Bill of Lading ("BOL") to both the DEP and the recycling facility (310 CMR 40.0034(5) and 40.0035(1) and (2));
- failed to use analytical and environmental data that is scientifically valid and defensible when sampling indoor air at a residence (310 CMR 40.0017);
- failed to perform an adequate Phase III evaluation (310 CMR 40.0861);

- filed an AUL not signed by the current property owner (310 CMR 40.1074(3)); and
- used an AUL to justify a conclusion that a condition of "No Significant Risk" exists or has been achieved at a site where the EPCs exceed applicable Method 1 standards (310 CMR 40.1012(4),.

(d) In the case of Site D, the LSP:

- failed to demonstrate that a condition of "No Significant Risk" had been achieved using a Method 1 Risk Characterization (310 CMR 40.0973(7));
- failed to demonstrate that access by children on a residential property is restricted or that such children are highly unlikely to be present on the property and, consequently, failed to categorize soils at the site as S-1 from five feet to fifteen feet (310 CMR 40.0933(4)(a)(4) and 310 CMR 40.0933(9);
- failed to determine the horizontal and vertical extent of contamination (310 CMR 40.0904(2)(a));
- failed to submit accurate information required in a BOL sent to both the DEP and a recycling facility (310 CMR 40.0034(5) and 40.0035(1) and (2));
- failed to use analytical and environmental data that is scientifically valid and defensible when sampling indoor air at the residence (310 CMR 40.0017);
- made false, inaccurate, and misleading statements to the DEP concerning the indoor air conditions at the on-site residence in both the RAO and a letter (310 CMR 40.0022); and
- failed to perform an adequate Phase III evaluation (310 CMR 40.0861).

309 CMR 4.03(3)(c), by failing to adequately define the extent of the contamination at all four sites.

309 CMR 4.03(3)(d) by, among other things:

- in the case of Site A, asserting in the RAO and the AUL Opinion that the AUL soil and asphalt barriers had been placed on the property when, in fact, they had not; and asserting that PCB levels above UCLs are representative of background at the site.

- in the case of Site B, basing conclusions regarding residential indoor air impacts on soil vapor data that did not exist and groundwater depth that was misrepresented;

- in the case of Site C, making false, inaccurate, and misleading statements to the DEP (1) by failing to include Vinyl Chloride exceedances in groundwater in the summary table in the RAO, and (2) by failing to

submit a soil stockpile sample result to the DEP that indicated that the stockpiled soil exceeded allowable permit levels at a recycling facility;

- in the case of Site D, making false, inaccurate, and misleading statements to the DEP concerning the indoor air conditions at the on-site residence in both the RAO and in a letter sent to the agency; and, with respect to the disposal of excavated soil, failing to notify DEP of the nature of the release and of the post-excavation soil results.

309 CMR 7.01(5) by, among other things:

- in the case of Site C, submitting false and misleading information to his/her client, knowing that information would be forwarded to the municipality for the purpose of obtaining a Certificate of Occupancy for the on-site residence; and for submitting false, inaccurate, and misleading information to DEP and the recycling facility, by failing to submit a soil stockpile sample result to the DEP that indicated that the stockpiled soil exceeded allowable permit levels at the recycling facility.

- In the case of Site D, submitting false, inaccurate, and misleading information to his/her client, DEP, and the municipality, knowing that information would be used for the purpose of obtaining a Certificate of Occupancy for the on-site residence; and for submitting misleading information to the recycling facility and failing to notify the recycling facility and DEP of the nature of the release and of the post-excavation soil results.

Conclusions of the Board

The Board determined that: (1) the LSP has established a pattern of submitting reports and opinions to the DEP that routinely fail to meet the requirements of the MCP and the Board's Rules of Professional Conduct; (2) the LSP has established a pattern of including false, inaccurate, and misleading statements and omitting significant information in his reports and opinions submitted to DEP, in some cases intentionally; (3) the LSP intentionally submitted misleading and false information to third parties, including his clients, municipal officials, and a recycling facility; and (4) the LSP has established a pattern of practice of putting the public at potential risk by failing to adequately address situations where there was a likelihood of direct human exposure to hazardous materials through air, water, and/or direct contact with soil. The Board also determined, because of the nature of the above violations, that the LSP was not in compliance, and would not be in compliance routinely and on a continuing basis, with all standards and requirements applicable to LSPs.

The Board also determined, based on the overall poor quality of the LSP's work and the LSP's demonstrated willingness to submit misleading or inaccurate information

in reports submitted to DEP, that an imminent threat to public health or safety or the environment could result during the pendency of an adjudicatory proceeding in this case.

Background of Case

In its initial investigation, the Board focused on four sites at which the LSP had provided LSP services. The facts regarding these sites are summarized below.

Facts Related to Site A

Site A was used for commercial, industrial, and military purposes from the early 1940s. Historical use of the property resulted in soil contamination from PCBs, metals (in particular, lead) and petroleum. At the time the LSP was involved, the property was being used for marina access and a public park was planned for the site.

The LSP, working for the previous site owner, submitted a Method 1, Class A-3 RAO and Notice of AUL on behalf of the new owner.

Two years later, the DEP issued a Notice of Audit Findings ("NOAF") and a Notice of Noncompliance ("NON") that invalidated the RAO and AUL, and required that a Tier II Extension and Phase II, III, and IV be completed prior to the submission of a revised RAO. The DEP audit determined that the RAO was not valid because site investigations did not support the LSP Opinion of "No Significant Risk."

The RAO documented that surface soil (0 to 3 feet) in the AUL area had contained elevated Exposure Point Concentrations ("EPCs") of PCBs (10 mg/kg) and lead (1,363 mg/kg), which exceeded the applicable Method 1 S-2/GW-3 and S-3/GW-3 soil standards of 2 ppm for PCBs and 600 ppm for lead. Nonetheless, the Respondent signed an AUL Opinion for that portion of the site and declared a condition of "No Significant Risk."

Three surface soil samples collected at the base of three utility poles located on the edge of the property showed PCB concentrations of 66, 100, and 120 ppm. Two of the PCB sample results were at or above the UCL for PCBs, which is 100 ppm. Located along pathways to a proposed park, these levels posed a potential Imminent Hazard. These concentrations were not included by the LSP in the EPC calculations in the Risk Assessment. Further evaluation was not conducted to define the extent of PCB contamination identified under the three utility poles. The LSP stated that the PCB concentrations exceeding UCLs at the utility poles were "commensurate with ambient background in and around the general area of the site," even though these were the highest PCB sample results found on the site. The LSP took a sample across the street from the utility poles that was non-detect for PCBs. Several other sample results for locations throughout the site were non-detect for PCBs.

The RAO clearly stated that, to mitigate future human exposure via dermal contact or ingestion within the AUL area, a clean soil barrier "was placed," compacted, graded and hydro-seeded, and asphalt paving "was placed" over the balance of the AUL area.

The RAO stated, "Together these vegetated and impermeable materials provide adequate barrier to PCB and lead residuals found within the AUL area," and that an AUL was "required to maintain a level of 'No Significant Risk' by ensuring the maintenance of the barriers and by restricting certain activities and uses which could result in exposures with PCB and lead residuals in soil located beneath the same."

The AUL documents were recorded in July 2000, and were all signed by the LSP in June 2000. Both the Notice of AUL and the LSP Opinion for the AUL state what was stated in the RAO: a clean soil barrier "was placed" on the site and hydro-seeded, and asphalt paving "was placed" over the balance of the AUL area, both providing an "adequate barrier to PCB and lead residuals found within the AUL area."

During a DEP audit inspection approximately two years after the AUL was registered and the RAO submitted, the DEP inspectors noted that the AUL area was neither hydro-seeded, nor paved, nor had a clean soil barrier been placed.

Facts Related to Site B

This property, a construction firm since 1956, consisted of 44 acres located in a residential area. It housed four garages, a warehouse for material storage and vehicle maintenance, and two other structures -- one used as a single-family residence and the other as an office building.

In 1990, gasoline underground storage tanks ("USTs") were found leaking after the town Board of Health received complaints of gasoline odors in a downgradient off- site residential water supply well. Follow-up analyses of wells in one downgradient direction (to the south) found a number of off-site residential wells had been impacted and the site was subsequently classified as Tier IA. According to the LSP's RAO, the last UST in the source area was removed in 1999. A groundwater elevation survey (provided in a 1991 report) indicated that the source area sat on a hydraulic divide.

In November 2001 the LSP submitted a Method 1, Class A-2 RAO, Phase II Comprehensive Response Action Update, and Phase III Evaluation of Comprehensive Remedial Action. In the fall of 2002, the DEP issued the LSP an RAO Denial and Notice of Noncompliance ("NON").

Prior to the submission of the RAO, the last known concentrations of benzene and MTBE detected in several residential water-supply wells were as high as 200 ug/l and 823 ug/l, respectively. These concentrations exceed the Method 1, GW-1 Standards of 5 and 70 ug/l respectively.

In early 1999, area residential wells in the southern downgradient direction were connected to a newly installed municipal water main. The RAO stated that the GW-1 category did not apply to the site because all properties within the plume had been connected to or were within 500 feet of municipal water, thus eliminating the exposure

pathway. However, more than one private water-supply well, within 500 feet of the contaminant plume, were still in use at the time of the RAO submission. Furthermore, Grants of Environmental Restriction were never implemented for any of the impacted residences with private drinking water supply wells that were removed from service. The LSP did not demonstrate that there was no hydrogeologic connection between the contaminated groundwater plume and the private water supply wells that were removed from service.

Post-excavation groundwater data results in the RAO from a bedrock well revealed an MTBE concentration of 114,000 ug/l in the source area, above the UCL of 100,000 ug/l, and more than 1,600 times the GW-1 standard. This impact to bedrock was not further evaluated by the LSP, who submitted the Class A-2 RAO despite the UCL exceedance. In fact, the RAO stated: "Although MtBE is persistent in groundwater systems, follow-up monitoring after contaminated soil excavations did not detect the presence of this compound within the source area" and, "Furthermore [MtBE] concentrations are well below applicable MCP GW-2 and GW-3 Standards."

The LSP compared soil contaminant results to the Method 2 Direct Contact Exposure Based Soil Concentrations even though there were confirmed impacts to groundwater at the site. In the RAO report the LSP acknowledged, "gasoline hydrocarbons continue to leach at the source area as observed in the post excavation groundwater analysis."

One residential supply well, located approximately 780 feet in a potentially downgradient direction north of the hydraulic divide, had only been sampled once in September 1991. During the investigation, the LSP stated that this residential well 780 feet to the north was not too far away to be considered a potential receptor. Another supply well located approximately 500 feet to the east of the source area is a potential receptor. At the time the RAO was submitted, the risk to these receptors was unknown and their potential as receptors was not addressed.

In 1999 all gasoline-impacted residential wells on the south side of the hydraulic divide were shut down as a result of the connection of these homes to the municipal water supply. In addition, a remedial treatment system that was installed in 1996 and an associated well, also located south of the divide, were shut down in 2000. During the investigation, the LSP stated that this treatment system had pumped "millions of gallons." The LSP did not adequately evaluate the effect of shutting down the remedial treatment system and the gasoline-impacted wells on the source area plume migration.

In the RAO report a potential indoor air exposure pathway to an on-site residential structure was mitigated using: (a) soil gas data from a survey conducted in 1991, the results of which the LSP claimed were below the allowable vapor threshold of 30 ppmv. However, the 1991 survey report (appended to the RAO) provided no results from soil gas samples located beneath or immediately adjacent to the structure as required by DEP Policy; and (b) a statement that historic monitoring indicated groundwater normally ranges between 15 to 25 feet. However, the 1991 soil gas survey

report estimated a depth to groundwater between 10 and 13 feet below grade immediately adjacent to the residence. The RAO provided no other clear identification of groundwater depth at the on-site residence.

The Phase III in the RAO concluded that Natural Attenuation, "no further action", was the chosen "viable remedial option."

Facts Related to Site C

Historically, this site housed a bleachery, webbing mill, fur factory, industrial laundry/dry cleaner, and an electrical contractor's business. By early 1994, the commercial structures had been razed, the property was subdivided into two residential parcels, and two houses were under construction. A strong chlorinated solvent odor was noted while digging a utility trench from the road to one of the residences. Follow-up investigations identified soil and groundwater impacted with tetrachloroethene ("PCE"), cis-1,2-dichloroethene ("DCE"), and trichloroethene ("TCE") above applicable reportable concentrations.

In early 1998, Excavation #1 was conducted on the property to remove soils contaminated with chlorinated solvents. In September 1998, after conducting limited response actions, the LSP submitted a Method 1, Class A-3 Partial RAO/AUL ("RAO- P") for one residential parcel ("Site C"). The other residential parcel ("Site D") was the subject of another RAO filed in September 1999. On November 28, 2000, the DEP issued a NOAF/NON with respect to the RAO-P submitted for Site C.

EPC calculations revealed PCE in groundwater from one monitoring well to be 51,000 ppb, above the UCL of 50,000 ppb. The RAO-P stated that the most recent sample result from that well had been 16,000 ppb. The first sample result from that well was 86,000 ppb of PCE. Those were the only two samples collected from that well. The GW-2 standard is 3,000 ppb.

The RAO-P identified a PCE level of 2,900 ppm (UCL is 1,000 ppm) in the deepest post-excavation soil sample at 12 feet below grade. The RAO-P acknowledged this area to be the likely source area, but additional soil sampling was not conducted below 12 feet at this location. This "hot spot" was averaged out using three soil samples that were collected outside of the disposal site, with PCE levels between 0.075 to 0.460 ppm.

The data in the RAO-P indicated a PCE exceedance (4,450 ppb) of the applicable GW-2 standard (3,000 ppb) in a well screened between 3-13 feet and within 30 feet of the on-site residence.

The RAO-P soil sample results summary table indicated post-excavation and boring sample contaminant EPC levels for PCE and Vinyl Chloride ("VC") up to 584 ppm and 25 ppm, respectively. The applicable current use, Method 1, S-3/GW-2 & GW-

3 Standards are 100 ppm for PCE and 2 ppm for VC. In the RAO-P the LSP justified these exceedances by using an AUL to mitigate exposure.

Of eight monitoring wells identified in the groundwater sample summary results table in the RAO-P, only one well indicated detection limits for VC near or below the 2 ppb GW-2 standard. That well is on the side of the property furthest from the source area, and is crossgradient from the source area. The other seven wells either had results or detection limits for VC in excess of 2 ppb. Specifically, laboratory results in 1994 from three of the wells revealed actual VC detections of 510, 33, and 510 ppb, yet the groundwater summary table provided in the RAO indicated these results were "BRL" (Below Reporting Limits).

The LSP, in his/her Method 1 Risk Characterization, categorized the soil as S-1 from zero to five feet below grade and S-2 from five to fifteen feet below grade.

The RAO-P stated that the vertical extent of contamination was determined based upon two downgradient soil sample results (collected between 14 to 17 feet depth). These soil samples were located outside of the source area and were not preserved in methanol. The RAO-P asserted that, "the subject release has not impacted the fractured bedrock nor the underlying aquifer," however, there was no data in the RAO to support this position. Bedrock is approximately 25 feet below grade and according to screening depths provided in the RAO-P, it appears that no bedrock wells were advanced.

With respect to the horizontal extent of groundwater contamination, the LSP stated in the RAOs for both Sites C and D, that "[n]o information was available on the crossgradient westerly abutting property and could not be obtained due to site access complexities." The LSP stated that s/he did not contact DEP regarding the access issue. The source area was located adjacent to the westerly property boundary.

Prior to the disposal of soils excavated from Site C, the following had occurred:

a. Documents existed in the public record describing the former existence of a dry cleaning facility at the property, indicating the contaminated soil should have been U listed under RCRA, 40 CFR 261.33(f).
b. In 1992, a UST had been removed from the easterly abutting property. In 1997, the LSP submitted an LSP Opinion concluding that the release had been remediated and residual TPH levels were below S-1 Standards.
c. In February 1998, the LSP submitted a Remedial Action Measure ("RAM") Plan for the excavation and off-site disposal of chlorinated solvent contaminated soil.
d. The RAM Plan stated, "If concentrations exceed recycling parameters, the soil will be properly disposed of at a licensed disposal facility under manifest."
e. The RAM Plan Transmittal Form identified the release as "chlorinated" from a "[h]istoric release from a former mill (demolished)." The box next to the word "Oils" in Section C was not checked.

Approximately two weeks into the RAM, 84 tons of stockpiled soils had been removed and the following had occurred:

a. The excavation soil description was of silty, sandy fill, sand, and cobble. There was no mention of urban fill.
b. The stockpiled soils were sampled for the full set of disposal parameters, revealing PCE at 9.7 mg/kg.
c. Three days after receiving the disposal parameter laboratory results, the pile was resampled for chlorinated solvents ("CVOCs") only, resulting in 2.6 mg/kg PCE.
d. The stockpiled soils were taken to a recycling facility authorized to accept petroleum contaminated soil containing CVOCs below 5 mg/kg; and only if the CVOCs did not cause the soil to be a listed hazardous waste.

The following discrepancies were in the Bill of Lading ("BOL") sent to the recycling facility:

a. The BOL included all disposal parameter results except the CVOC lab sheet showing the 9.7 mg/kg PCE result, or the Chain of Custody ("COC") for that sampling round.
b. The BOL did include the 2.6 mg/kg PCE lab sheet.
c. The tops of the laboratory data sheets were spliced out and replaced (in hand written text) with the LSP's firm's name, obscuring all pertinent laboratory information like sampling dates, analysis dates, laboratory identification numbers, and site location.
d. The BOL described the soil as a "surficial" release from "TPH/Urban Fill".
e. On the original BOL, the words "TPH/Urban Fill" were typed over a whited out "chlorinated solvent impacted soil" description. On the attached original Soil Recycling Submittal form, the words "TPH/Urban Fill" were typed over a whited out "Chlorinated solvents" description, and the words "Subsurface Release" were changed to "Surface Release".

The following occurred after the excavated soils were recycled:

a. The RAO stated that the release "likely involved a sub-surface and surficial release of PCE".
b. The original copy of the BOL sent to the DEP did not include any of the disposal parameter laboratory data sheets.
c. The RAM Completion Transmittal Form described the release as a "[h]istoric release from dry cleaners" and as "[c]oncentrations of VOCs discovered during utility excavation." The hazardous material was described as "Chlorinated Solvents". The box next to the word "Oils" was not checked.
d. In response to a DEP request, the soil disposal parameter results the LSP submitted did not include the 9.7 mg/kg PCE laboratory data sheet.
e. The DEP contacted the lab that analyzed the soil for disposal parameters, asked for all sampling results associated with the site from that time period, and only then learned of the 9.7 mg/kg PCE result.

At an interview with the DEP concerning the disposal of the excavated soils, the LSP stated:

a. That s/he knew that the recycling facility would not accept the soil if the concentration was over 5 ppm of PCE, or if there was a known source of the PCE;
b. That s/he knew at the time the site had been used for dry cleaning;
c. S/he could provide no explanation why the 9.7 mg/kg PCE result was never given to the recycling facility; and
d. "There isn't a document that goes out the door that I don't review."

During the investigation, the LSP:

a. Said it was in the best interest of the project to get the soil to the recycling facility because of the excessive cost to dispose of hazardous waste.
b. Stated that a former employee altered the lab reports with the handwritten headers.
c. Acknowledged that s/he ordered that the BOL form be changed from a "chlorinated solvents" description to "TPH/Urban Fill", because it was in his/her opinion, a more appropriate description.
d. Acknowledged that "the release is primarily a solvent release."

In April 1998, a residential indoor air sample was collected and analyzed for VOCs via modified EPA Method 8260. The LSP, in an RFI Response to DEP, acknowledged that this round of air sampling was "not adequate for final risk assessment." The results were below the reporting limit of 0.7 ppm v/v (4,662 ug/m^3), which exceeded all of the following:

a. The Excess Lifetime Cancer Risk Level for PCE of 1.92 ug/m^3.
b. December 1995, DEP "Massachusetts Allowable Threshold Concentrations" for PCE of 4,600 ug/m^3, the non-carcinogenic health effect specific to the Hazard Indices.
c. January 1997 EPA TO-14 detection limit of 2 ug/m^3, an available method for use in determining VOC indoor air contaminant levels at detection limits adequate for determining risk to residents.

In May 1998, the prospective purchasers of the Site C residence entered into a Purchase and Sale Agreement ("P&S") with the LSP's client for the purchase of the residence. The LSP admitted to the DEP that s/he was aware of the P&S.

A week after the P&S was signed, in June 1998, at the request of his/her client, the Respondent wrote a letter summarizing the status of environmental conditions at the property. The letter stated that initial indoor air analyses had been conducted and that no contaminants of concern were detected, and that the indoor air evaluation was done "to establish that re-occupancy of the dwelling could occur." In response to a DEP RFI, the LSP indicated that this letter was used in assisting the buyer with the mortgage company

and was also provided to the municipality and, based on that letter, in conjunction with the municipality's property inspection, the Certificate of Occupancy for the residence was granted. The LSP had also stated to DEP that s/he understood that the letter was needed by his/her client to facilitate the sale of the property and to obtain the Certificate of Occupancy from the municipality.

One month later, in July 1998, the LSP wrote his/her client another letter to "provide the documentation necessary for the building inspector to evaluate allowing occupancy based on the resolution of indoor air quality concerns presented herein" (to which the LSP attached the June 1998 letter). In the July letter, the LSP compared the air results (0.7 ppm v/v) to the NIOSH/OSHA limit for PCE of 25 ppm and stated that this was over two orders of magnitude less and concluded, therefore, that indoor air at the dwelling did not pose any significant risk. The letter stated that the potential for indoor air impact was based on the presence of residual groundwater concentrations and that "NO applicable GW-2 exposure point concentrations standards have been exceeded on the … property and therefore indoor air is not at risk." However, by this point a groundwater sample had been collected from a well screened 3 to 13 feet below grade and approximately 20 feet downgradient of the residence, revealing a PCE concentration of 6,500 ppb and an EPC of 4,450 ppb (GW-2 is 3,000 ppb). There had been no other location sampled between that well and the residence. Three days after the July letter was dated, the municipality granted the Certificate of Occupancy for the residence. The LSP told the DEP that it was these letters that led to the issuance of the Certificate of Occupancy.

Five days after the Certificate of Occupancy was granted, the LSP collected additional indoor air samples from the residence. These were collected by drawing air through two tandem charcoal tubes for 100 minutes and analyzing for VOCs per a modified EPA Method SW-846-8260. Although the results were below the reporting limits of 2,000 ug/m^3, this reporting limit is well above the Excess Lifetime Cancer Risk Level for PCE of 1.92 ug/m^3. The LSP claimed that these samples were run by EPA Method TO-14 and were below reporting limits. Shortly after the second round of indoor air sampling, the LSP submitted a Tier II Classification to the DEP, which identified the potential exposure due to air as "NONE" or "NOT APPLICABLE" resulting in a score of zero for indoor air impacts.

On September 3, 1998, the LSP submitted the RAO-P. In it the LSP stated that the on-site dwelling "will not be impacted via off-gassing from soils or groundwater. The results of the indoor air sampling from the dwelling have confirmed no impact to the dwelling and consequently support this opinion."

The RAO-P stated that a feasibility assessment and cost/benefit analysis was conducted to identify potential remedial action alternatives likely to result in a significant improvement of property conditions. Soil excavation, in-situ remediation, and chemical oxidation were screened out, determined to be infeasible due in whole or in part to financial limitations. Biodegradation and chemical degradation was then chosen as the preferred remedial option. The LSP concluded, "ongoing attenuation/degradation will

result in progressively lower levels of chlorinated solvent concentrations in soil and groundwater, and as such, does NOT warrant any further active remediation."

In the RFI Response to DEP, the LSP stated that based on groundwater sample data it was obvious that reductive dechlorination was actively going on. "Specifically, the presence of increasing levels of cis – 1,2 dichloroethene and vinyl chloride in these most downgradient wells represents the accumulation of daughter products associated with naturally occurring reductive dechlorination processes and provides quantifiable parameters evidencing same." The LSP noted that "[r]eductive dechlorination occurs by the sequential breakdown of PCE to TCE to DCE to VC to ethene."

The RAO-P relied, in part, on the placement of an AUL in order to reach the conclusion that "No Significant Risk" exists with regard to human exposure to site contamination in soil and groundwater. The AUL permitted non-vegetable shallow gardening, landscaping, or any other residential activities that did not cause direct contact or disturbance of soils below one foot from ground surface. The AUL also restricted the construction of any structures within the bounds of the AUL area. The AUL encompassed about 700 square feet of the residents' back yard and was located within a sewer and gas easement.

In response to a DEP RFI, the LSP provided a letter dated July 23, 1998, the day of the closing for the property, addressed to the mortgage company and signed by the residential owners acknowledging that they knew that the soil was contaminated with PCE, was cleaned by the seller of the property, and, according to the municipality, presented no health risk. This letter said nothing about residual soils that do present a health risk and said nothing about the presence of an AUL. The LSP stated that the July 23, 1998, letter "evidences the buyer's [sic] knowledge of the conditions at the site."

The AUL plans were not completed until July 28, 1998, five days after the property was transferred, and not filed with the Registry of Deeds until August 8, 1998.

The AUL Opinion for the site was signed and stamped by the LSP on August 25, 1998, and filed and recorded with the Registry of Deeds by the LSP's firm on the same date, more than a month after the PRP sold the property to the residents. The LSP stated that "all appropriate officials were noticed of and provided with copies of the AUL document" on August 27, 1998.

The residents read and speak no English. After purchasing the property, the residents planted peach trees, a vegetable garden, and placed a shed all in the AUL area. The residents (through a translator) told the DEP Auditor that they had no idea that an AUL existed.

Facts Related to Site D

The two-story residential duplex located on Site D is approximately 60 feet downgradient of the residence on Site C. The 1994 utility trench, resulting in the release discovery, was being advanced across the Site C property to the Site D property, through the previously discussed source area. On February 27, 1998, Excavation #2 was performed on Site D, approximately 40 feet downgradient and completed on the same day as Excavation #1 on Site C.

In September 1999, approximately one year after the Site C RAO-P submission, and after conducting additional soil, air, and groundwater assessment within the boundaries of Site D only, the LSP submitted a Method 1, Class A-2 RAO for Site D.

The highest levels of groundwater contamination (EPCs of 51,000 ppb PCE and 11,000 ppb TCE) on both properties were detected in MW-2 and MW-2A (an area never excavated) half way between the two excavations and just inside the boundary on Site C. In December 1997, the last sample collected from MW-2A prior to the RAO submission revealed PCE over five times the GW-2 standard and TCE 60 times the GW-2 Method 1 Standard. MW-2 and MW-2A were located approximately 30 feet up/cross-gradient of the residential duplex.

Results from the last round of groundwater samples collected from MW-1B, located about 15-20 feet immediately upgradient of the duplex, revealed TCE over eleven times and VC 550 times above the applicable Method 1, GW-2 Standards. MW-1A, with VC levels nearly thirty times the GW-2 standard, and MW-1B were approximately 20 feet cross gradient of the area thought to contain the highest levels of contamination. VC results for the last sample (collected in December 1998) from MES-MW3A, approximately 25 feet cross gradient of the duplex, revealed VC levels slightly over 15 times the applicable Method 1, GW-2 Standard. The RAO acknowledged that groundwater at Site D met the criteria for a GW-2 Classification.

The LSP used soil exposure depths of 1-5 feet for S-1 and 5-15 feet for S-2. The RAO concluded that, "[b]ased upon current and foreseeable future use conditions, the physical soil categories S-1, S-2 and S-3 apply."

In January 1999 two excavations were conducted to remove about 11 cubic yards of soil from Site D. These soils were mixed and recycled at the recycling facility under the prior approval granted by the facility under the prior BOL for the soils removed from Site C. The excavated soils were not analyzed for soil disposal parameters. The methanol preserved post-excavation soil results were 5, 6.5, and 9.3 mg/kg PCE for the sidewalls and 14 mg/kg PCE for the bottom samples of one of the two excavations. The facility was never notified of these exceedances, which are in excess of the 5 mg/kg limit allowed in the facility's permit. The facility's permit does not allow for RCRA waste. However, in the RAO-P for Site C, submitted on September 3, 1998, the LSP stated that the contamination was likely the result of a historic sub-surface and surficial release from a dry cleaner.

In October 1998, indoor air samples were collected from the Site D residence. These were collected by drawing five liters of air for about 1.5 hours in the basement and about 0.8 hours in the "apartment" and kitchen. The Chain of Custody showed a request for a 2 mg/m^3 detection limit, and identified the LSP as the "Contact". The CVOC sample results were below detection limits.

On January 8, 1999, the LSP submitted a letter to his/her client, copied to the DEP and the municipality. The stated purpose of the letter was to keep the LSP's client apprised of the status of the project, "with specific regard to pending occupancy and indoor air quality laboratory results..." It further stated that it was the LSP's "professional opinion that there are no known occupancy issues associated with Property conditions relative to indoor air as defined at this time," specifically referencing the indoor air results discussed above.

The January 8, 1999, letter further stated, "Moreover, and by way of example, the results of the TO-14 analyses at the property are well below the NIOSH/OSHA TWA/TLV for the contaminants of concern," because the detection limit is "two orders of magnitude less than the TWA/TLV".

DEP discussions with the laboratory determined that the air samples were not analyzed by TO-14, the detection limits were 1,000 times those necessary for residential impact assessment, and NIOSH/OSHA limits are based on 8-hour day/40-hour week worker exposure assumptions and not residential exposure assumptions. During the investigation the LSP admitted that the OSHA/NIOSH standards "are applicable to workers."

The January 8, 1999, letter also stated that, "although the applicable GW-2 standards for Vinyl Chloride and Trichloroethylene have been exceeded in the on-site groundwater monitoring wells MW-1A and MW-1B, the potential future impact to indoor air from residual groundwater contamination is unlikely." The letter further stated that, "This assertion is based, primarily, upon the hydraulically crossgradient position of these exposure points relative to the structure. Groundwater flow direction at the site and abutting property (Site C) has historically been found to be in a northwesterly direction beyond and outside the footprint of the residential structure."

The EPCs for three wells, MW-1A, MW-1B, and MES-MW3A (all located within 30 feet of the house), were all above the applicable Method 1, GW-2 Standards for TCE and/or VC. MW-1A and MW-1B are within 30 feet of and upgradient of the residence.

The RAO for Site D stated that the normal breakdown chain for PCE occurs as follows: PCE—TCE –DCE—VC—ethene. The RAO went on to state that the presence of PCE and its breakdown compounds strongly suggests that the biodegradation process is occurring at the Site. The RAO also stated that "of the detected on-site chlorinated solvents, VC can be considered the greatest risk to health, ahead of PCE and TCE." Indeed, the RAO indicated that VC has been classified by USEPA as a Human

Carcinogen, and PCE and TCE have been classified by USEPA as Probable Human Carcinogens.

After considering and rejecting soil excavation with off-site disposal, in-situ remediation, and chemical oxidation as remedial options, the RAO concluded that "natural attenuation appears to be reducing concentrations of chlorinated solvents in Site groundwater," and, therefore, was considered a viable remedial option in conjunction with the AUL at Site C. The RAO also stated that "[n]atural attenuation (no further action) should be considered as a viable remedial option when low level residuals are present and where no likely impacts to potential receptors have been demonstrated."

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LSP Board Complaint 00C-18 and 07C-04

LICENSE SUSPENSION

On March 10, 2008, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to a suspension of his/her LSP license for a period of two years. The LSP is also required to complete certain continuing education coursework prior to the end of the suspension period. The Board and the LSP entered into the ACO before the Board had completed an investigation of two separate disciplinary complaints filed against the LSP.

In November 2000, a private citizen filed a complaint with the Board alleging that the LSP failed to meet professional standards by filing an inadequate "Downgradient Property Status" report. The complaint alleged that the LSP's report failed to identify any source from which the contaminant could have traveled to the property at issue, failed to explain how the contaminant came to be located on the property, and failed to investigate a petroleum pipeline crossing the property as a potential source of the contamination. In April 2007, MassDEP filed a complaint with the Board alleging that the LSP failed to oversee response actions adequately at a site by neglecting to sample for certain contaminants in areas where they were likely to be found.

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LSP Board Complaint No. 00C-012 and 00C-013

LICENSE REVOCATION

On September 11, 2003 the Board issued a final order revoking the LSP's license and prohibiting the LSP from re-applying for a license for a period of five years. The final decision was issued after an adjudicatory hearing. This action resulted from two separate complaints filed by the Department of Environmental Protection ("DEP"). The Board's factual findings are summarized below.

The Board had also determined that an imminent threat to public health or safety or the environment could result during the pendency of an adjudicatory proceeding in this case. Therefore, on June 8, 2001, the Board issued an order immediately suspending the

LSP's license pursuant to 309 CMR 7.09. After a hearing before the Board on June 14, 2001, regarding the necessity of the immediate suspension, the Board issued a written decision affirming the immediate suspension. The five-year prohibition on reapplication will run from June 8, 2001, the date when the LSP's license was suspended by the Board.

Background of Case

The Board focused on four sites at which the LSP had provided LSP services. The facts regarding these sites are summarized below.

Facts Related to Site A

On July 29, 1999, DEP received a Phase I Initial Site Investigation/Class A-2 Response Action Outcome Statement ("RAO") signed by the LSP for a site that had been used as a gasoline station since 1923 ("Site A"). The RAO stated that petroleum contamination was discovered during excavation of underground storage tanks at Site A in 1993; however, very little site-specific data were included in the RAO. For example, the area of contamination was not identified, boring logs were not included, air sampling locations referenced in the text were not identified, and no information regarding other source areas or migration routes (such as floor drains, dry wells, etc.) was provided.

In preparing the RAO, the LSP collected soil samples from a total of three borings at Site A. The RAO stated that the results of Volatile Petroleum Hydrocarbon ("VPH") analyses of indoor air samples were still pending at the time the RAO was filed. The RAO also stated that the LSP's firm "attempted to install three groundwater monitoring wells at the site but met refusal at one of the borings and installed only two wells"; no further technical justification was provided for not drilling a third well. Based on the LSP's own presumed groundwater flow direction, neither of the two monitoring wells installed by the LSP appeared to be located downgradient of the contamination source area. The RAO also stated that two pre-existing wells were present on the site, but these wells were not referenced on any site maps in the report. The RAO stated that the LSP's firm had attempted to sample these two wells but the wells were dry. Only one round of groundwater samples was collected and analyzed for the RAO.

Several of the non-cancer hazard indices presented in tabular format in the Method 3 risk calculation section of the RAO indicated values well above the MCP limit of 1. For example, the Employee Indoor Air hazard index was shown as 458, the Adult Resident Indoor Air hazard index was shown as 722, and the Child Resident Indoor Air hazard index was shown as 592. Despite the presentation of these numbers in the report's tables, the RAO stated that the total hazard index for each exposure pathway was less than 0.01, and therefore below the MCP limit of 1.

The risk characterization stated that, because the site was expected to be paved in the foreseeable future, soils at the site would be inaccessible under future site conditions. The site was not paved when the LSP filed the RAO, and no Activity and Use Limitation

("AUL") had been prepared and filed to "lock in" the assumption that the site would remain paved in the future.

The RAO included several other obvious inconsistencies in addition to the discrepancy noted above between the tables and the text regarding the non-cancer hazard indices. In addition, it appeared that the Respondent had used an RAO report previously prepared for another site as the template for this RAO and had failed, in numerous instances, to delete references to the other site. A few of the many examples of confusion in the RAO included the following:

- The title on page 1 of the risk characterization read "APPENDIX A: METHOD 3 RISK ASSESSMENT DRAFT." The word "DRAFT" was crossed out with ink.

- The RAO stated on one page that indoor air quality analysis for VPH had been conducted, but stated on a subsequent page that indoor air quality sample analysis for VPH was pending. The risk characterization stated that no air sampling had been conducted at the site.

- The RAO stated that the LSP installed two groundwater monitoring wells and that two previously installed wells existed at the site. The risk characterization stated that the LSP installed three monitoring wells. Another page of the risk characterization stated that TPH was detected in two of the six wells on the site. Site maps and analytical data included with the RAO confirmed that the LSP installed two wells and only took samples from these two wells.

- In numerous instances, the LSP failed to delete geographical references to another site that was not the subject of the RAO. This other site appeared to be the subject of an RAO report that had served as the template for the current RAO. For example, the risk characterization noted that regional groundwater flow was inferred from topographical elevations and proximity to a named river that is not, in fact, located near Site A.

- The RAO correctly stated that a 72-hour notification was made to DEP in 1993 regarding petroleum contamination found on-site during UST removal. However, the risk characterization section stated: "no source of a historical release has been identified for the site."

- The RAO stated: "sensitive receptors such as children in a residential neighborhood … are not present in the vicinity of the site." A sentence from later in the same paragraph stated that the soil at the site was classified as RCS-1 because it was within 500 feet of a residential structure.

On May 23, 2000, DEP issued a Notice of Audit Findings ("NOAF") regarding the RAO listing numerous violations. The NOAF required that a written Audit Follow-

up Plan be submitted to DEP for approval, or that the RAO be withdrawn and a Tier Classification package be submitted. On August 17, 2000, DEP received an Audit Follow-up Plan prepared by the LSP. On October 6, 2000, DEP issued a written denial of the Audit Follow-up Plan. On October 20, 2000, DEP received a Modified/ Revised Audit Follow-up Plan that it denied by a letter dated December 5, 2000. The denial letter stated that "the Revised Plan also fails to provide sufficient information to meet the minimum requirements of the …[MCP], and continues to indicate a general lack of understanding of fundamental site assessment principles and practices."

Facts Related to Site B

On August 5, 1999, DEP received a Class B-2 RAO signed by the LSP. The property that was the subject of the RAO had been operated as a gas station and auto repair shop from 1925 until 1993 ("Site B"). The RAO stated that free phase product was identified in one monitoring well during a 1986 environmental assessment of the site. The RAO also stated that gasoline USTs were removed from the site in 1993, that another environmental consulting company had conducted a Phase I Initial Site Investigation in July 1998, and that the LSP had conducted a Phase I Site Investigation in support of the RAO in December 1998.

The RAO stated that, as part of the July 1998 assessment, the prior consultant took samples from four groundwater monitoring wells at Site B. The LSP installed six new monitoring wells when s/he initiated subsurface investigations at the site in late 1998, but did not collect samples from any pre-existing wells on the site. In addition, no previous groundwater analytical data were incorporated into the RAO. The July 1998 assessment prepared by the prior consultant stated that naphthalene had been detected in a monitoring well at a level of 1,080 mg/l. The RAO did not indicate the existence of this naphthalene result.

The RAO stated that no Method 3 Upper Concentration Limits ("UCLs") were exceeded, thereby ignoring the 1998 naphthalene result which was over 100 times greater than the concentrations detected in the other wells. If the previous naphthalene value had been averaged in with the other monitoring well results and the arithmetic average had been compared to the UCL for naphthalene, the result would have been a UCL exceedance and the LSP would not have been able to demonstrate that a level of 'no significant risk' existed at the site.

The Site Employee Indoor Air Hazard Index Table in the RAO identified the non-cancer risk to employees from exposure to impacted indoor air to be 2,560. Despite this, the risk characterization stated that the total site HI for the site employee exposure pathway was less than 0.01.

The RAO was also inconsistent with regard to indoor air quality. The RAO stated that because concentrations of benzene, ethyl benzene, toluene and xylenes in excess of residential standards were present in indoor air, an AUL had been placed on the site to eliminate potential residential exposures. But the risk characterization stated that no air

sampling was conducted at the site. The risk characterization also stated that the environmental media impacted at the site included soil and groundwater; air was not mentioned.

The RAO was based in part upon the assumption that an AUL would be implemented to ensure that all of the surfaces of the site would be paved and that the floor of the garage structure at the site would be sealed. The risk characterization stated: "since the site is expected to be paved in the foreseeable future, soils at the site will be inaccessible under future site conditions." All site surfaces had not been paved and the garage floor had not been sealed at the time the RAO was filed.

The RAO also included many errors and inconsistencies besides the discrepancies between the RAO's tables and text with regard to hazard indices, and conflicting statements regarding indoor air quality, both of which were described above. As with the RAO for Site A, the Site B RAO stated that a named river was located near the site when, in fact, this river was not in the vicinity. Also, at several points in the risk characterization, the wrong address was listed for the site. In addition, while the risk characterization stated that soil sampling was conducted to characterize the presence of lead, neither the text nor analytical data in the RAO indicated that any lead testing was carried out.

DEP issued an NOAF regarding this RAO on August 16, 2000. The NOAF listed numerous MCP violations and required that additional site assessment be carried out to determine whether a permanent solution could be achieved, or whether the RAO had to be retracted.

Facts Related to Site C

On February 7, 2000, under the LSP's direction, a Limited Removal Action ("LRA") consisting of the excavation of petroleum-contaminated soil was initiated at Site C. On that same day, the LSP informed DEP that s/he had performed an LRA by excavating 30 cubic yards ("cy") of contaminated soil. The LSP requested that DEP provide oral approval to continue soil excavation under a Release Abatement Measure ("RAM") to remove an additional 270 cy of contaminated soil, bringing the total volume of soil to be removed to 300 cy. DEP gave oral approval for this additional volume. The LSP filed a RAM Plan for the site dated March 3, 2000.

The RAM report filed by the LSP stated that soil samples had been collected in early January 2000 in an area at the site measuring 30 by 30 feet and at a second smaller area nearby. The analytical results indicated TPH levels of 611 ppm and 1460 ppm at two different sampling points near the perimeter of the 30 by 30 foot area. TPH was discovered at 989 ppm at a sampling point near the perimeter of the separate smaller sampling area. The LSP did not collect any soil samples outside the perimeter of either area.

The LSP stated in the RAM Plan that, based upon the soil sampling results, s/he estimated that less than 100 cy of petroleum contaminated soil were present on site, and conditions were suitable to conduct an LRA. Despite the fact that analytical results indicated elevated levels of TPH at sampling locations along the perimeter of two separate sampling areas, the Respondent did not collect any additional samples outside the perimeter of either area. Therefore, the Board determined that, prior to conducting the LRA, the LSP failed to undertake sufficient assessment to conclude that less than 100 cy of contaminated soil existed at the site.

Facts Related to Site D

On May 23, 2000, DEP received a Modified Immediate Response Action Plan ("Modified IRA") for Site D dated April 24, 2000, and signed by the LSP. The LSP had taken over as LSP-of-Record at Site D some time before the IRA plan was filed. In October 1996, greater than ½ inch of non-aqueous phase liquid ("NAPL"), believed to be fuel oil, was discovered in groundwater at the site. An IRA was initiated at that time by a previous LSP and IRA activities had not yet been completed when the LSP became involved. Because IRA activities had not been concluded, the LSP called his/her plan a Modified IRA. The LSP's April 2000 Modified IRA proposed the use of steam-enhanced vacuum recovery as a means of recovering NAPL from the site.

On June 13, 2000, DEP verbally rejected the Modified IRA on the basis that inadequate site assessment activities had been carried out and that the plan provided insufficient technical information to support the use of the proposed remedial system. On June 19, 2000, DEP issued a written denial listing several deficiencies in the submitted plan.

After DEP issued its denial, the LSP filed an IRA Plan Modification Retraction/IRA Completion Report/RAM Plan dated July 2, 2000. With this document, the LSP retracted the Modified IRA. DEP received this document on July 6, 2000. The July 2, 2000 document stated that the IRA Completion statement was based upon work conducted under an IRA by the previous consultant in 1996, 1997, and 1998 and updated by IRA assessment investigations conducted by the LSP's firm in December 1999 and June 2000. The document also stated that: "it is the opinion of [the LSP's firm] that the site is stable, no critical exposure pathways have been impacted, no significant release migration has been demonstrated and no condition of imminent hazard is currently present at the site."

The July 2, 2000 document also included a RAM plan that was based upon the use of a steam-enhanced vacuum recovery system to recover NAPL and return the site to Method 1 soil and groundwater standards. The RAM plan stated that steel microwells that are part of the recovery system were installed at the site during the last week of May 2000, around the time DEP received the LSP's Modified IRA. The RAM plan also stated: "the steam injection system was turned on the first week of June to determine that the system was operational and the direction of the steam flow. Temperature readings were taken and the system was turned off." The RAM stated that DEP approval for

implementation of the RAM plan was unnecessary because "the Site has been Tier Classified and a presumptive RAM approval is not required."

On December 11, 2000, DEP issued a Notice of Noncompliance ("NON") directly to the LSP. The NON stated that the LSP had violated the MCP by: conducting IRA activities prior to waiting out the presumptive approval period; filing a RAM plan that was technically deficient; and attesting that the activities described in the RAM plan were in accordance with the MCP even though those activities had been recently denied by DEP. The NON required the LSP to provide a written response within 21 days.

Having not received a response from the LSP within 21 days, a DEP staff member spoke with the LSP in mid-January 2001. The LSP indicated that s/he did not read the NON when s/he received it, believing it was simply a copy of the NON addressed to his/her client. On or around January 15, 2001, the LSP filed a written response to the NON.

Conclusions of the Board

The Board determined, based on the poor quality of the LSP's work, that the LSP did not appear to understand the fundamental principles of site assessment or risk characterization and did not appear to have a strong command of the MCP. The Board also determined that the LSP was not in compliance, and would not be in compliance routinely and on a continuing basis, with all standards and requirements applicable to hazardous waste site cleanup professionals.

The Board did not accept the following defenses raised by the LSP: that at least some of his/her poor quality work was caused by the fact that his/her client(s) was (were) unwilling to spend the money needed to conduct adequate assessment activities; that some of the deficiencies in his/her work were due to the fact that s/he is a sole practitioner and did not have other people readily available with whom s/he could consult; and that the quality of his/her work had recently improved. The Board did take into consideration that the overall poor quality of the LSP's work could pose a potential risk to public health, safety or the environment.

Summary of Findings

The Board determined that the LSP violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1), by failing to act with reasonable care and diligence in regard to the four separate sites outlined above;
- 309 CMR 4.03(3)(b), by failing to follow the requirements and procedures set forth in the applicable provisions of MG.L. 21E and 310 CMR 40.0000;
- 309 CMR 4.03(3)(c), which requires an LSP to make a good faith and reasonable effort to identify and obtain relevant and material data

evidencing site conditions, by, among other things, failing to conduct sufficient assessment activities in regard to the four sites described above, and failing to disclose in the RAO for Site B the existence of groundwater data from the previous year indicating a high concentration of naphthalene in a monitoring well at the site; and

- 309 CMR 4.03(3)(d), which requires that an LSP disclose and explain, in a waste site cleanup activity opinion, material data that might have tended to support an opinion significantly different from the one expressed, by failing to disclose in the Site B RAO the existence of groundwater data from the previous year indicating a high concentration of naphthalene in an on-site monitoring well.

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LSP Board Complaint 00C-11

VOLUNTARY SURRENDER OF LICENSE

On May 9, 2006, pursuant to an Administrative Consent Order ("ACO"), the LSP voluntarily surrendered his/her LSP license. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any violation of law or regulation but agreed not to contest the Board's findings and agreed to voluntarily surrender his/her LSP license. Under the terms of the ACO, the LSP is prohibited from reapplying for an LSP license for a period of two years. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Summary of Findings

Based on a preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1) by failing to act with reasonable care and diligence;
- 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;
- 309 CMR 4.03(3)(c) by failing to collect sufficient on-site data to evidence conditions at sites; and
- 309 CMR 4.03(3)(d) by failing to disclose and explain in RAO opinions material facts and data known to the LSP that may have tended to have supported a significantly different opinion from the one expressed.

Background of Case

The Board's investigation focused on the LSP's work at three different hazardous waste sites. The relevant facts regarding each site are explained below.

Site A

A gasoline station had occupied the property between 1940 and 1980. In February 1994, 3 inches of separate phase petroleum product was discovered in a monitoring well at the site. On October 30, 1997, DEP received a Class A-2 Response Action Outcome statement prepared by the LSP. The RAO was based on a Method 1 Risk Characterization.

As part of an audit of the RAO submittal, DEP conducted a site inspection in October 1999 and discovered free phase petroleum in two on-site monitoring wells. DEP issued a Notice of Audit Findings ("NOAF") regarding the RAO submittal on March 3, 2000. The NOAF listed numerous MCP violations and required that the RAO Statement be retracted.

The Board found that the LSP's work in regard to the RAO was deficient in the following ways:

- The LSP did not calculate groundwater flow direction at the site and, therefore, it is unclear whether any evaluation of potential impacts on the downgradient side of the property were performed.

- The LSP did not sufficiently evaluate the possibility that contamination may have migrated underneath the southwestern portion of Building No. 1 on the abutting property.

- The LSP did not collect sufficient groundwater data to adequately determine the nature and extent of contamination at the site or whether a condition of No Significant Risk had been achieved.

- The LSP did not collect sufficient groundwater data to support the statement in the RAO Opinion that separate-phase product previously detected in monitoring well MW-106 had been successfully reduced to background levels.

- The LSP failed to evaluate the feasibility of using remedial action alternatives other than in-situ bioremediation to reduce residual petroleum hydrocarbon contamination in soil at the site to background levels.

Site B

The property is located adjacent to Site A discussed above. The same individual owned both properties, and both properties were investigated during the same time period. Site B is located in an industrial setting and is occupied by several buildings. A tidally influenced river abuts the property to the south.

The LSP conducted investigations on several discrete areas of the property and filed three separate partial RAO Opinions (P-1, P-2, and P-3) regarding different portions of the property. RAO P-1 was filed in October 1997, RAO P-2 was filed in July 1998, and RAO P-3 was filed in September 1999.

RAO P-1, filed in October 1997, referred to Lot 203/ Building 3, which was formerly occupied by a wood/paper box facility, a leather tannery, and a machine shop. DEP audited RAO P-1 and issued an NOAF dated December 2000 that listed a number of Massachusetts Contingency Plan violations and required retraction of the RAO Opinion.

The Board found the LSP's work in regard to the RAO P-1 submittal was deficient in the following ways:

- The LSP failed to report in the RAO Opinion that blue/green stained soil had been observed outside the western wall of Building 3. The LSP also failed to report that a surface soil sample from this area was found to contain 390 mg/kg lead.

- The LSP failed to collect additional soil samples for metal analysis from the blue/green stained area even though a wood/paper box facility, leather tannery, and machine shop had occupied the site in the past.

- The LSP failed to collect sufficient soil data to determine the nature and extent of contamination, particularly in the area surrounding grid locations F-5 and B-7 where polyaromatic hydrocarbons (PAHs) were detected in soil.

- The LSP failed to collect sufficient groundwater data to determine the nature and extent of contamination. For instance, groundwater was not analyzed for PAHs in areas where PAHs had been detected in soil at concentrations exceeding Method 1 Standards.

- The LSP also failed to conduct periodic groundwater sampling to demonstrate how groundwater concentrations were affected by seasonal or tidal influences or how concentrations varied over time. Between September 1993 and August 1997, each on-site well was either sampled just once for total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) or until a non-detect was reported or risk standard was met. No individual well was sampled more than three times and the sampling was sporadic.

- The LSP did not properly conduct the Risk Characterization for the RAO Opinion. The cumulative receptor cancer and non-cancer risks were not calculated for potential indoor air exposures and compared to MCP risk limits, as required by the MCP. Instead, the LSP compared concentrations of VOCs in indoor air to Occupational Safety and Health Administration (OSHA) limits. In addition, the air samples were analyzed using methods with detection limits higher than applicable guidelines.

The LSP filed a Class B-1 RAO for the P-3 area in September 1999. RAO P-3 involved three separate areas of the property: an area south of Building #1 between the building and a river, a circular area around well MW-101, and the footprint of Building #2. Both Buildings #1 and #2 were historically used as machine shops. All contaminants of concern discussed in the Risk Characterization portion of this RAO report were compared to Method 1 Standards with the exception of one contaminant (chloroethane) for which no Method 1 Standard existed and the LSP stated that he used a Method 2 Risk Characterization to calculate a standard.

DEP audited RAO P-3 and issued a Notice of Audit Findings on December 28, 2000. DEP required retraction of the RAO.

The Board found that the LSP's work in regard to the RAO P-3 submittal was deficient in the following ways:

- The LSP failed to delineate the nature and extent of contamination in the RAO area. For instance, the LSP did not delineate the extent of chlorinated VOC contamination in groundwater monitoring well MW-103, located south of Building #2. The LSP did not collect additional groundwater samples after 1993 from MW-103 prior to filing the RAO and did not install monitoring wells downgradient of this well to evaluate the extent of contamination. The RAO report states: "No point source was identified for contaminants present in groundwater at MW-103." However, DEP noted in the NOAF that a sump pump located in a concrete pit beneath the floor in Building 2 discharged to the ground surface in the vicinity of MW-103.

- The LSP also failed to evaluate the potential for VOC contamination to exist near the loading dock north of Building 2, and underneath Buildings 1 and 2.

- The LSP failed to address the extent of contamination of polychlorinated biphenyls (PCBs) detected in soils in the transformer area west of Building #1. A 1993 environmental assessment report indicated that PCBs (Aroclor 1260) were present in two samples at concentrations of 1.5 µg/g and 13 µg/g. The MCP standard for PCBs in soil is 2 µg/g. The collection and analysis of these samples was not discussed in the LSP's RAO submittal. The LSP did not identify an Exposure Point Concentration for PCBs, and potential risks from PCB contamination were not evaluated.

- The LSP did not properly conduct the Risk Characterization. Cumulative receptor cancer and non-cancer risks were not calculated for potential indoor air exposures and compared to MCP risk limits, in accordance with the MCP. Rather, concentrations of VOCs in indoor air were compared to OSHA limits. In addition, the air samples were analyzed using methods with detection limits higher than applicable guidelines.

- The LSP inappropriately opined that a condition of No Significant Risk had been achieved at the site because the Exposure Point Concentrations for both vinyl chloride and 1,1-dichloroethylene (1,1-DCE) exceeded applicable GW-2 Standards.

- The LSP failed to evaluate the potential for a condition of Substantial Release Migration based on available information indicating that chlorinated VOCs had been detected in the adjacent river. As stated in DEP's NOAF, groundwater samples collected from groundwater monitoring wells MW304 and MW304A, located in the intertidal zone of the river, contained up to 21,000 µg/L of 1,1-dichloroethane, 298 µg/L of 1,1-DCE, 1,850 µg/L of trichloroethylene and 22,800 µg/L of vinyl chloride.

Site C

Site C is a commercial property that was occupied by a car sales company, a car repair business, and a small machine shop. Site C also was once part of a larger parcel occupied by a fuel oil company, and at another time it was occupied by a tire company. The property is located within 500 feet of a residential property and a private drinking water well.

On October 9, 1997, DEP received an LSP Evaluation Opinion ("the Opinion") prepared by the LSP. As stated in the Opinion, the property was listed as a Location To Be Investigated (LTBI) on September 16, 1993, when petroleum contamination was noted during the removal of a 2,000-gallon fuel oil underground storage tank.

DEP issued an NOAF regarding the Opinion on August 24, 1998. The NOAF noted several MCP violations and required retraction of the Opinion.

The Board found the LSP's work in regard to the Opinion was deficient in the following ways:

- The LSP carried out Release Abatement Measure (RAM) activities without DEP approval in violation of the MCP. More specifically, the removal of contaminated soil and floor drains/settling chambers in June and August 1997 were unapproved RAM activities.

- The LSP did not identify current and foreseeable site activities and uses of the property in the Opinion.

- The LSP collected insufficient data to determine groundwater flow direction.

- The LSP collected insufficient data to determine the types and extent of contamination in soil and groundwater at the site. The Opinion defined the site as encompassing the entire property; however, the subsurface activities were limited

and focused on small areas beneath and around the existing on-site building despite the fact that historical use of the property included a fuel oil company.

- The LSP did not collect sufficient groundwater data at the site. Only a single groundwater monitoring well was installed in the former underground storage tank grave, and groundwater samples were collected from the single well on only two occasions – in July 1997 for TPH and in August 1997 for Extractable Petroleum Hydrocarbons (EPH). Groundwater at the site was encountered at eight feet below grade. Analytical data indicated that soil remaining at four to eight feet below grade beneath the garage floor contained elevated levels of TPH (up to 5540 mg/kg) but the LSP failed to install any groundwater monitoring wells in this area. Analytical data also revealed the presence of tetrachloroethylene (PCE), other VOCs, and PAH compounds such as naphthalene and phenanthrene in soil beneath the garage, where the floor drains, a machine shop, and automobile repair facilities were located. The LSP did not collect any groundwater data from this area to determine whether groundwater had been impacted by these contaminants.

- The LSP did not appropriately characterize risk at the site. Throughout the text of the Opinion, the LSP evaluated risk based on a comparison of Exposure Point Concentrations to Reportable Concentrations rather than to Method 1 Standards, in violation of the MCP. The Risk Characterization also only considered the Method 1 GW-1 category and failed to consider the Method 1 GW-2 and GW-3 categories, as required by the MCP.

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LSP Board Complaint No. 00C-009

LICENSE REVOCATION

On December 8, 2003, pursuant to an Administrative Consent Order ("ACO"), the Board revoked the license of an LSP for a period of five years from the date of signing of the ACO, for serious violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any wrongdoing but agreed not to contest the Board's findings and accepted a Five-Year Revocation of his/her LSP license. Under the terms of the ACO, the LSP may not reapply to the Board for an LSP license for a period of five years from the date of signing of the ACO.

This disciplinary action resulted from a complaint filed by the Department of Environmental Protection ("DEP"). In the Order to Show Cause served on the LSP, the Board described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds to revoke the LSP's license and prohibit the LSP from re-applying for a license for a period of five years.

The Board also determined that an imminent threat to public health or safety or the environment could result during the pendency of an adjudicatory proceeding in this case. Therefore, on October 1, 2002, the Board issued an order immediately suspending the LSP's license pursuant to 309 CMR 7.09. On October 8, 2002, the LSP waived a hearing before the Board, at which s/he could have contested the necessity of the suspension pending a full adjudicatory hearing on the five-year revocation.

Summary of Findings

In its investigation, the Board focused on four sites at which the LSP had provided LSP services. Based on the investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1) for failing to act with reasonable care and diligence. Examples of conduct by the LSP that violated this regulation included, without limitation, the following:

  (a) In the case of Site A, the LSP:
  - failed to adequately assess groundwater prior to completing a Method 1 Risk Assessment and submitting an RAO Report and, therefore, failed to adequately characterize risk at the site;
  - failed to perform adequate confirmatory soil sampling after the excavation was completed; and
  - failed to demonstrate a condition of No Significant Risk at the site, due to the failure to assess groundwater impacts.

  (b) In the case of Site B, the LSP:
  - failed to mention in the RAO Report that #2 fuel oil was used at the site for the previous 32 years and, therefore, failed to mention it as a potential source of contamination;
  - failed to discuss in the RAO Report other potential sources of petroleum contamination;
  - relied on information in the RAO Report that the LSP knew or should have known was incorrect in reaching the conclusion that all of the contamination at the site was coal ash; and
  - signed an RAO opinion that contained incorrect information.

  (c) In the case of Site C, the LSP:
  - failed to provide adequate oversight of the response action; and
  - conducted an IRA without DEP approval.

  (d) In the case of Site D, the LSP:
  - failed to adequately characterize the vertical and horizontal extent of contamination in a Phase II Report;

- performed a Method 1 Risk Characterization with incomplete information and failed to perform a Method 3 Risk Characterization for surface water;
- failed to sample offsite residential water supply wells because the client refused and then proceeded to submit a Phase II Report without addressing known potential receptors;
- failed to analyze for chlorinated solvents and lead contamination; and
- failed to install monitoring wells to assess groundwater impacts within 30 feet of a convenience store building and, therefore, potential vapor impacts to the indoor air of the building.

- 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, including, without limitation, the following:

(c) In the case of Site A, the LSP:
- failed to assess groundwater and, therefore, failed to adequately characterize risk at the site (310 CMR 40.0904);
- failed to describe the source and extent of the release, including the vertical and horizontal extent of contamination in groundwater, and all existing groundwater migration pathways (310 CMR 40.0904(2)(a), (b), and (c));
- failed to demonstrate a condition of No Significant Risk at the site, due to the failure to assess groundwater impacts (310 CMR 40.1003(1));
- failed to demonstrate that all sources of oil and hazardous materials had been eliminated or controlled by collecting only one confirmatory bottom sample from a location between the two UST graves and not collecting samples directly under each UST grave (310 CMR 40.1003(5)).

(d) In the case of Site B, the LSP:
- failed to define the extent of the release and failed to perform a risk characterization of the site (310 CMR 40.0904(2)(a) and 310 CMR 40.0900).

(c) In the case of Site C, the LSP:
- conducted an IRA without DEP approval (310 CMR 40.0313, 310 CMR 40.0412).

(d) In the case of Site D, the LSP:
- failed to characterize the vertical and horizontal extent of contamination at the site (310 CMR 40.0835);
- by conducting a Method 1 Risk Characterization based on incomplete information and by failing to perform a Method 3

Risk Characterization failed to perform a Risk Characterization for all appropriate human and environmental receptors identified at or near the disposal site (310 CMR 40.0835(4)(h)); and

- failed to install monitoring wells within 30 feet of the convenience store building and, therefore, failed to evaluate the potential for groundwater to be a source of vapors of oil and/or hazardous material to the indoor air of the convenience store building (310 CMR 40.0835(4)(e)).

- 309 CMR 4.03(3)(c) by, among other things:
  (a) In the case of Site A, failing to adequately assess groundwater, and failing to conduct adequate confirmatory soil sampling; and
  (b) In the case of Site D, failing to adequately characterize the vertical and horizontal extent of the contamination at the site; failing to analyze the off-site residential water supply wells; failing to identify potential sources of the house well contamination; failing to analyze for chlorinated solvents and lead contamination in groundwater; and failing to assess groundwater impacts within 30 feet of the convenience store building and, therefore, potential vapor impacts to the indoor air of the building.

- 309 4.03(3)(d) by, among other things:
  In the case of Site B, failing to disclose the following facts and information known by him/her which may tend to support or lead to a waste site cleanup activity opinion contrary to, or significantly different from, the one s/he filed: failing to mention in the RAO Report that fuel oil was used at the site for the previous 32 years and stored in underground tanks on site, and, therefore, failing to mention it as a potential source of contamination; failing to discuss in the RAO Report other potential sources of petroleum contamination; and claiming to rely on analyses performed after the RAO Report was completed and submitted to DEP and after the Notice of Audit concerning the site was issued by DEP.

Conclusions of the Board

The Board determined that the LSP has established a pattern of submitting reports and opinions to the DEP that routinely fail to meet the requirements of the MCP and the Board's Rules of Professional Conduct. The Board also determined, because of the nature of the above violations, that the LSP was not in compliance, and would not be in compliance routinely and on a continuing basis, with all standards and requirements applicable to LSPs.

The Board also determined, based on the overall poor quality of the LSP's work, that an imminent threat to public health or safety or the environment could have resulted

during the pendency of an adjudicatory proceeding in this case. In addition, the LSP had been disciplined by the Board previously. The Board considers prior discipline to be a significant aggravating factor in making disciplinary decisions.

Background of Case

In its investigation, the Board focused on four sites at which the LSP had provided LSP services. The facts regarding these sites are summarized below.

Facts Related to Site A

Site A was the location of a trucking company at which a fuel oil release from two underground storage tanks ("USTs") occurred. Between October 23 and October 27, 1998, personnel from the LSP's company provided oversight during the removal of the two USTs.

On December 23, 1998, the DEP received a Class A-2 Response Action Outcome Statement ("RAO") for the site. The LSP Opinion in the RAO was signed by the LSP. The LSP stated in the RAO report that no sample concentrations exceeded the applicable S-1 and S-2 soil standards and concluded that a condition of "No Significant Risk" was present at the site for soil. In the RAO report, the LSP also stated that groundwater was not encountered during the UST removals and related soil excavation activities and that contamination was not "expected" to have migrated to groundwater.

The RAO contained a laboratory report for a water sample collected from the tank grave on October 23, 1998, and labeled as a "groundwater sample." The collection and analysis of this sample were not discussed in the text portion of the RAO. Results from this water sample were below the GW-3 standard, but slightly above the GW-2 standard for one extractable petroleum hydrocarbon ("EPH") carbon fraction range and also for one volatile petroleum hydrocarbon ("VPH") carbon fraction range.

The RAO stated that ¼- to ½-inch holes were observed in the east side of UST-1 and the bottom of UST-2. The RAO also stated that approximately two feet of water was observed in the tank excavation on October 23, 1998, and that no water was observed on October 27, 1998, at a depth of 10 feet below ground surface.

Field head-space screening of soil samples collected from the UST excavation on October 23, 1998, indicated that a reportable condition existed due to the measurement of greater than 1,000 ppm total VOCs in soil samples collected adjacent to UST-1.

Field notes submitted by the LSP during the course of the Board's investigation and dated October 23, 1998, indicated the depth to water in the tank grave was approximately 8 feet and that UST-1 was "under" about one foot of water. The field notes also stated that sheen and oil droplets were observed on the water surface and three holes were observed in the east side of UST-1.

Upon removal of the USTs, three sidewall soil samples and one bottom soil sample were collected from the UST-1 grave and one sidewall and one bottom soil sample were collected from the UST-2 grave for laboratory analyses. Results of the analyses indicated impacts in four of the six samples. The highest reported concentrations were in two samples collected from the UST-2 grave, both of which exceeded applicable Method 1 S-1 soil standards.

Upon completion of soil excavation activities on October 27, 1998, the two UST graves had been combined into one enlarged excavation. Five additional soil samples were collected and submitted to a laboratory to be analyzed for EPH and VPH. The five confirmatory soil samples were collected from each of the four sidewalls of the enlarged excavation and from a location in the center of the base of the enlarged excavation. The bottom sample was collected from a location between the two former USTs and not directly beneath either one. Results of the analyses indicated petroleum compounds were present in four of the five samples. Relatively low concentrations of EPH and VPH were reported present in the bottom sample. The highest concentrations were reported in a sample collected from the west sidewall, near the origin of the previous UST-2 sidewall sample.

The laboratory report for the initial six samples was dated November 3, 1998, one week after the final soil excavation occurred and the final confirmatory samples were taken. Furthermore, these samples were not analyzed until after the excavation was completed on October 27, 1998. Therefore, on October 27th, the LSP would not have known where further excavation needed to be performed and where the post-remediation samples should have been collected to confirm that the most heavily impacted soil was removed.

In a statement to Board investigators, the LSP said that s/he was "not sure" why only one bottom confirmatory sample was taken and was "not sure" why it was not taken under UST-2 to confirm the effectiveness of the soil excavation. In response to a question on this issue, the LSP also stated that s/he had been "getting heat" from his/her client.

The LSP did not assess potential impacts to groundwater and did not evaluate the hydrogeology of the site.

On April 6, 2000, the DEP issued a Notice of Audit Finding ("NOAF") to the site owner based upon a review of the December 23, 1998, RAO. The DEP concluded that the site owner was not in compliance with applicable regulations and issued a Notice of Noncompliance ("NON") under separate cover dated the same day. The DEP alleged that the Respondent was not in compliance with the following sections of the MCP: (1) 310 CMR 40.0904, because no groundwater assessment was conducted and included in the Method 1 Risk Characterization; and (2) 310 CMR 40.1003, because of a failure to assess groundwater and investigate the extent of potential groundwater contamination from historical UST releases. The DEP required the installation of a minimum of three groundwater monitoring wells, collection and analysis of groundwater samples for both

EPH and VPH, and the preparation and re-submittal of a revised risk assessment including the groundwater assessment data.

The LSP's firm filed a new Phase I and Tier Classification document with the DEP in March 2001. The LSP told Board investigators that s/he signed the Phase I Transmittal Form. The Phase I/Tier Classification report prepared by the LSP's firm and dated March 8, 2001, concluded that "a release of petroleum has impacted soil and groundwater at the site." The conclusion also stated that three groundwater monitoring wells in the vicinity and downgradient of the former UST field showed evidence of petroleum-related compounds in groundwater that exceed DEP Method 1 Risk Characterization Standards. An earlier section of the report noted that groundwater samples collected from these three monitoring wells showed elevated EPH and VPH concentrations that exceed both the reportable concentrations (RCGW-2) and Risk Characterization Standards (GW-2 and GW-3). The report concluded that further response actions are required at the site.

The Phase I report also stated that on November 17, 2000, depth to groundwater ranged from 4.55 feet to 6.82 feet below grade in monitoring wells where petroleum constituents were detected. These monitoring wells were all in close proximity to the former UST locations.

Facts Related to Site B

On May 28, 1999, the DEP received a Class B-1 RAO filed by the LSP for a site that was the location of a former thread manufacturing facility. The LSP stated in the RAO report that a level of No Significant Risk existed at the site because "petroleum constituents initially identified during subsurface investigations [were] attributable to coal ash which is exempt from notification."

The LSP stated that his/her firm's Project Manager for Site B made the original decision that there were reportable conditions at the site. The LSP said that s/he made the later decision that the petroleum constituents initially identified during subsurface investigations were attributable to coal ash, which is exempt from notification pursuant to 310 CMR 40.0317(9).

The thread manufacturing facility operated at the site between the 1930s and 1950s and reportedly used coal to fire furnaces for heating purposes and to produce steam and electricity used in a manufacturing process. A #6 fuel oil furnace had been installed at the site in the 1950s to replace the coal-fired furnace when the thread facility ceased operation. The #6 fuel oil was stored on site in two 90,000-gallon underground concrete bunkers. The two #6 fuel oil bunkers had been pumped out and cleaned in the summer of 1997. The LSP told Board investigators that s/he had gone inside the bunkers and saw underground lines that went from the bunkers through the areas where contaminated soil was found. The LSP also said that an old boiler house, removed in 1977, had burned oil, probably since the 1950's.

When the current owner purchased the property in 1967, it came with a new heating system using #2 oil as fuel. Although the LSP told Board investigators that the current heating source at the subject property is #2 fuel oil, the LSP's RAO did not discuss or consider the use of #2 fuel oil at the site. The RAO also did not discuss the possibility of surface spills at the site, or the possible presence of weathered #6 fuel oil at the site.

The LSP, in the RAO, claimed that total concentrations of PAHs at the site were approximately 200,000 ppm, which is 20% of the soil by volume, and consistent with residual coal ash constituents. However, the sample with the highest concentration of PAHs was not 200,000 ppm, but 2,160.8 ppm, or approximately 0.2% of soil by volume. The LSP did not explain this discrepancy in the RAO.

The LSP also stated in the RAO that attached laboratory chromatograms did not identify a profile typical of conventional fuel oils. However, the laboratory identification numbers on all but one of the chromatograms failed to match up with any of the other laboratory identification numbers for the sample results included in the RAO, based upon a review of the laboratory reports and the chain of custody records. The one chromatogram that did match up with a sample was based on a non-detect sample result. The LSP did not explain this discrepancy in the RAO.

The LSP admitted to Board investigators that in one particular sample at Site B there were higher levels of total petroleum hydrocarbons ("TPH") than would normally be found in coal ash. The LSP also admitted that naphthalene was found at the site and that naphthalene is not a constituent of coal ash.

The LSP stated that s/he relied on "third party labs" for analysis of the material found at Site B. However, the analytical results by these "third party labs" were not included in the LSP's RAO report, because the analyses were done after the Notice of Audit was issued regarding Site B. The lab report was dated January 20, 2000, whereas the RAO report was dated May 24, 1999, and was received by the DEP on May 28, 1999. According to the chain of custody, the sample was collected on January 18, 2000.

The LSP stated that after the Notice of Audit was issued for Site B, "we tried to go on the offensive and get the ammunition ready" by getting more information on coal ash. The LSP also stated, with respect to the issue of whether the contamination at the site was coal ash: " Frankly, it was on the fence; a little bit of a close one. We thought we'd sneak it in."

On March 24, 2000, the DEP issued an NOAF and NON to the site owner. The DEP stated in the NON that the TPH and EPH data provided by the LSP "does not support the assertion that a release of petroleum did not occur at the site, or that contamination is consistent with background levels which pose No Significant Risk." The DEP indicated that based upon its review of the data, the contaminants at the site were indicative of weathered petroleum rather than coal ash. The DEP also asserted that the extent of the release had not been adequately defined and that a risk characterization had not been

performed to demonstrate a level of No Significant Risk. The DEP requested that the RAO be retracted.

Facts Related to Site C

Site C is a gasoline service station that was the subject of an Administrative Consent Order ("ACO") entered into by DEP, the gasoline station operator, and the LSP's company. The ACO spelled out several violations of the MCP at the site, specifically that, prior to reporting a release of petroleum to the DEP, petroleum-impacted soil was transported off site using a Bill of Lading signed by the LSP, and that impacted groundwater was treated and discharged prior to notification.

In the ACO, the LSP agreed to a Statement of Facts, including the fact that the LSP's firm provided LSP services during the conduct of response actions to address a release of oil and/or hazardous materials at Site C. The LSP was the LSP-of-Record at Site C.

The LSP stated to the Board's investigators that there had been some previous non-compliance issues with this site, namely, some 120-day exceedances. Some pre-characterization soil samples collected on November 23, 1998, exceeded applicable reportable concentrations. The LSP admitted to the Board's investigators that s/he "knew going in that this would not be a Limited Removal Action – that there would be more than 100 cubic yards of soil involved."

On December 21, 1998, personnel from the LSP's company provided oversight during the removal of two 6,000-gallon gasoline USTs as part of an upgrade of the gasoline station that was to also include installation of new USTs.

On December 21, 1998, soil samples collected from the soil on top of the USTs were screened with a PID and generated a measurement greater than 500 ppm. Samples collected from a soil pile generated a PID reading greater than 875 ppm. Another sample was collected near Tank 1 at a depth of 8 to 9 feet, with a PID reading of approximately 1,800 ppm, creating a 72-hour reportable condition under the MCP.

On December 28, 1998, the LSP signed a Bill of Lading for 500 cubic yards ("cy") of soil. The DEP had not been notified of the release. The Bill of Lading indicated that 367 tons of petroleum-impacted soil had been transported off site for recycling on December 28th.

On December 29, 1998, at 9:00 AM, personnel from the LSP's company called DEP and reported a release of petroleum. The caller also reported to the DEP that approximately 200 to 300 cy of petroleum-impacted soil had been excavated and stockpiled on site and that contaminated groundwater had been removed from the UST excavation and was being stored in an on-site frac tank. The DEP granted the caller's request to perform the following activities as an IRA: excavate up to 500 cy of petroleum-impacted soil; and pump, treat, and discharge ground water in accordance with a previously approved National Pollutant Discharge Elimination System ("NPDES")

permit exclusion. DEP approval of the IRA took effect at 10:00 AM on December 29, 1998. The oral approval of the IRA did not include approval of work done prior to notification.

On December 30, 1998, DEP personnel inspected the site. At that time, the LSP's firm's field personnel informed the DEP staff that groundwater treatment and discharge had started before noon on December 28, that soil had been transported off site for recycling on the same day, and that more than 100 cy had been excavated prior to notification.

The LSP stated to the Board's investigators that the excavation work at the site was being conducted under the direction of the LSP's firm. The LSP also stated that it had been assumed that his/her firm would notify DEP of any release at the site, and s/he relied upon the firm's Senior Project Manager to ensure that proper notification was made.

The LSP acknowledged to the Board's investigators that s/he had not been on site, and added: "Admittedly, I was a little hands off at this site. There was a rush to get this done." The LSP added with respect to this site: "I relied on some people who failed to execute."

An IRA Plan signed by the LSP, and received by the DEP on February 18, 1999, stated that a 72-hour notification requirement was triggered at the site on December 28, 1998. However, this statement in the IRA Plan is inaccurate because, as noted above, the LSP's own firm's field notes indicate that the release should have been reported to the DEP by December 24, 1998, 72 hours after the condition requiring notification was identified.

The IRA Plan received by the DEP on February 18, 1999, indicated that groundwater had been pumped from the excavation, treated, and discharged prior to notification without the approval or knowledge of the DEP. The treated groundwater was discharged to a nearby river in accordance with the NPDES permit from December 28, 1998, through December 31, 1998. A Dewatering Groundwater Treatment and Discharge Report, dated February 4, 1999, prepared by the LSP's firm and addressed to USEPA, indicated that total benzene, toluene, ethylbenzene, xylene ("BTEX") and MTBE effluent concentrations exceeded discharge limits on both December 29 and December 31, 1998.

Facts Related to Site D

The property at Site D consists of a gasoline station with a convenience store, a residential structure, an auto repair garage, an auto body shop, and a multi-unit apartment building. Three private water supply wells are located on the site property to provide potable water to the on-site structures. Several reported releases of petroleum from USTs have occurred at the site since 1986. The site was listed as a Location To Be Investigated ("LTBI") on November 15, 1990.

Groundwater flows across the site in an east/northeasterly direction. A wetland is located to the northeast of the site. Surface water impacts have been identified in the wetland area northeast of the site, and a wetland area and a culvert to the southeast of the site. Results of groundwater analyses conducted in July 1994 by a previous consultant ("Consultant A") indicated the presence of total BTEX at concentrations up to 9,459 ug/L and MTBE at concentrations up to 1,980 ug/L. (The GW-1 standard for MTBE is 70 ug/L.) Concentrations of benzene were reported up to 1,090 ug/L.

On August 11, 1995, the LSP submitted an Imminent Hazard Information Transmittal Form to the DEP with a map showing that several other private residences with private water supply wells are located within 500 feet of the site. On August 17, 1995, the LSP submitted a Phase I Initial Site Investigation Report for the site to the DEP. The Phase I Report stated that there were approximately 22 additional private water wells located within a 0.25-mile radius of the site.

On February 11, 1999, the LSP submitted a Phase II Comprehensive Site Assessment Report to the DEP. The LSP stated in the Phase II Report that, based upon laboratory results, elevated petroleum contamination remained in the soil to the east of the UST field. The Respondent also stated in the Phase II Report that the horizontal extent of soil contamination had been delineated based upon the reported laboratory results, and that the vertical extent of contamination had been identified to the south and west of the UST fields based upon laboratory results of soil samples, but the vertical extent of contamination to the east and north of the site had not been delineated.

In the Phase II Report, elevated concentrations of contaminants were reported present in seven of eleven groundwater samples. In addition, the VPH aliphatic fractions C5-C8 (360 ppb) and C9-C12 (70 ppb) and MTBE (960 ppb) were reported in one surface water sample located at a culvert outfall in the southeast portion of the site. The LSP stated in the Phase II Report that additional monitoring wells would be required to fully delineate the horizontal and vertical extent of groundwater contamination. Based upon the detection of contaminants in the surface water sample, the LSP notified the DEP of a Condition of Substantial Release Migration ("SRM").

The LSP included a Method 1 Risk Characterization with the Phase II Report to evaluate the potential risk from soil and groundwater at the site. In the report, the LSP stated that the Method 1 Risk Characterization Standards could not be used to characterize the risk from surface water and, therefore, a Method 3 would have to be used to evaluate the surface water body. However, a Method 3 Risk Characterization was not performed.

Concentrations of MTBE in groundwater exceeded the GW-2 standard at a monitoring well located approximately 50 feet downgradient of the on-site convenience store building. The LSP concluded that exposure point concentrations in two shallow bedrock monitoring wells were below GW-2 standards and therefore, "the potential for vapor impacts to indoor air is considered low for the existing on-site building." However, there were no monitoring wells within 30 feet downgradient of the on-site

convenience store. Groundwater located within 30 feet of an occupied building or structure is considered to be a potential source of vapors of oil and/or hazardous material to indoor air.

The LSP concluded that a condition of No Significant Risk did not exist at the site because of elevated exposure point concentrations in groundwater and, therefore, further evaluation was needed in the downgradient direction.

The LSP stated that his/her client was "adamant" about filing a Phase II Report with DEP in order to demonstrate to the client's parent company that s/he was making submittals. According to the LSP, the parent company would not reimburse the client for costs associated with the Phase II work unless DEP filing deadlines were met by the client. The LSP also explained to the Board's investigators that the Phase II Report had been filed so that the client could get reimbursed by the Chapter 21J Board, even though the Phase II site assessment work was not completed.

On June 17, 1999, the LSP submitted a "Phase II Comprehensive Site Assessment Addendum" to the DEP. The stated objective of the addendum was to "delineate the nature and extent of dissolved gasoline compound impacts identified during the initial Phase II in soil, surface water, private drinking water wells, ground water, and any other potentially impacted media at the site." The addendum was also to address the SRM condition previously identified. However, the Phase II Addendum concluded by stating that additional subsurface assessment activities would be necessary at the site to better delineate both the vertical and horizontal extent of contamination at the site and to determine the source of the impacts to the house supply well.

Neither the Phase II Report nor the Phase II Addendum identified or discussed the off-site private residences that were mentioned in the Phase I Report and the Imminent Hazard Information Transmittal Form. The LSP stated to the Board's investigators that the off-site private residential wells were not sampled because his/her client did not want to do the work.

The LSP did not analyze for chlorinated solvents and lead contamination even though the gasoline station had been operating at the site since 1937, and chlorinated solvents had been detected previously at the site.

On October 14, 1999, the DEP submitted an NOAF and NON to the site owners. The NON stated that both the Phase II Report and the Phase II Addendum failed to meet the Phase II standards and Phase II Report requirements (310 CMR 40.0833 and 40.0835). The NON also stated that both Phase II reports concluded that further assessment was necessary to fully delineate the horizontal and vertical extent of contamination at the site. Some specific activities or omissions constituting noncompliance that were cited by the DEP included, without limitation: (1) failure to delineate the horizontal and vertical extent of soil and groundwater contamination; (2) failure to analyze soil and groundwater for lead contamination; (3) failure to conduct Method 3 Risk Characterization of risk to surface water; (4) failure to evaluate for risk

the historic contaminants detected at the site; and (5) failure to evaluate potential vapor impacts to an on-site convenience store building despite concentrations of MTBE in groundwater (65,000 ppb) in a monitoring well located approximately 50 feet downgradient of the building exceeding the GW-2 standard.

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LSP Board Complaint Numbers 00C-05 and 01C-04

VOLUNTARY SURRENDER OF LICENSE

On September 30, 2006, pursuant to an Administrative Consent Order ("ACO"), the LSP did not admit to any violation of law or regulation but agreed to voluntarily surrender his/her LSP license and agreed not to reapply for an LSP license for three years. The Board and the LSP entered into an ACO before the Board had completed an investigation of a disciplinary complaint filed by a private party and a separate complaint filed by the Massachusetts Department of Environmental Protection ("MADEP"). Under the terms of the ACO, the LSP is also required to submit a written application, take and pass the Board's licensing examination, and attend continuing education courses prior to reapplying for an LSP license.

In April 2000, a member of the public filed a complaint with the Board regarding the LSP's professional conduct in connection with oversight of the assessment and cleanup of contaminants in the soil and groundwater at a site. From about 1966 to 1982, chemicals used in the dyeing industry were manufactured at this 70-acre site. In May 2001, MassDEP also filed a complaint with the Board concerning the LSP's work at the same site. Among other things, the complaints alleged that the LSP did not adequately assess the nature and extent of the contaminants released at the site and the risk posed by the site. In addition, MassDEP referred information to the Board concerning three other sites, alleging that the LSP did not meet all of MassDEP's regulatory requirements for work performed at those sites.

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LSP Board Complaint No. 00C-004

LICENSE SUSPENSION

On December 5, 2008, after an adjudicatory hearing, the Board issued a Final Order suspending the LSP's license for six months. The suspension began on January 5, 2009. The LSP appealed the Board's Final Order to the Superior Court. The Superior Court stayed the suspension on January 21, 2009 while the Superior Court considered the appeal. In December 2009, the Superior Court affirmed the Board's decision to suspend the LSP's license for six months. In January 2010, the LSP appealed the Superior Court's decision to the Appeals Court where the case is now pending.

This disciplinary action resulted from a complaint by the Department of Environmental Protection ("DEP") alleging that the LSP committed fraud by charging a small town for over 400 hours of LSP services over a period of 15 months for response activities at a site that resulted from the release of two ruptured drums of creosote, where the disposal site was only 400 feet square and six inches deep. The Board's Order to Show Cause described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds to take disciplinary action against the LSP. In its initial decision, the Board determined that the LSP violated the following Board Rules of Professional Conduct:

> 309 CMR 7.01(5), which provides that it shall constitute misconduct, and be grounds for appropriate discipline, for an LSP to engage in acts that involve dishonesty, fraud, deceit, and lack of good moral character; and that have a substantial connection to the professional responsibilities of an LSP.
>
> 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing.

The LSP appealed the Board's initial decision. The adjudicatory hearing was conducted by an Administrative Magistrate of the Division of Administrative Law Appeals (DALA). The Magistrate's Recommended Decision concluded that the Board had not proven that sufficient facts existed to discipline the LSP.

After reviewing the Recommended Decision and the entire record of the adjudicatory hearing, the Board issued Final Findings of Fact and Rulings of Law concluding that the LSP violated the obligation to act with reasonable care, knowledge, and skill (309 CMR 4.02(1)) by spending multiple times the range of hours that the work would have taken even an inexperienced LSP in 1998-99. On December 5, 2008, the Board issued its Final Order suspending the LSP's license for six months. The LSP appealed the Final Order to the Superior Court. On December 22, 2009, the court affirmed the Board's decision to suspend the LSP's license for six months. .

Background of Case

This case came to the attention of the DEP when the government of a small town in Massachusetts ("Town") contacted DEP to complain about the length of time it took to get a Response Action Outcome ("RAO") statement filed for a release that occurred at a town construction site. The Town also complained to DEP about the mounting costs shown on invoices that the Town was receiving for what the Town saw as a minimal amount of work performed at the site. DEP subsequently filed a Complaint with the Board against the LSP, alleging that the LSP engaged in fraud by billing for LSP services that were not actually provided, and failed to act with reasonable care and diligence by not submitting an RAO within a reasonable time.

Invoices submitted to the Town included costs for LSP services that the LSP had billed to the prime contractor for the site. The prime contractor had hired the LSP to perform LSP Services at the site. The LSP was billing $125 per hour for his/her services and the prime contractor was in turn billing the Town $200 per hour for the LSP's services. All billing by the LSP was for LSP Services only and not for sampling, removal, or disposal of contaminated material.

On September 29, 1998, during excavation activities associated with construction of the Town project, two rusted, partially buried 55-gallon drums of creosote were ruptured, releasing approximately 100 gallons of product, which resulted in a 2-hour reporting condition. The architect working at the site on behalf of the Town notified the DEP of the release on that day. A DEP Release Log Form listed the LSP's name and telephone number as the LSP for the site. DEP orally approved an Immediate Response Action (IRA) consisting of isolating and cordoning off the contaminated area and the sampling and analysis of the materials, followed by excavation and proper disposal of the contaminated soil.

On October 4, 1998, the Town's own emergency response team conducted some of the cleanup activities at the site as part of the Town's annual emergency hazardous materials response training activities. Six 55-gallon drums were filled with contaminated soil.

On October 15, 1998, DEP gave oral approval to the LSP to excavate up to an additional 200 cubic yards of soil in the area where the release from the drums occurred. Excavations were performed on three separate occasions during October 1998. A total of 15 soil samples and one "exposed groundwater" sample were taken for laboratory analyses during three reported sampling events.

However, no soil samples were collected at the conclusion of the excavation activities in October 1998 to confirm that all the contaminated soil had been removed. In fact, confirmatory samples were not collected at the site until 12 months later, on October 23, 1999.

On November 30, 1998, DEP received a written IRA Plan from the LSP. The IRA Plan included a summary of response actions undertaken to date. The LSP stated in the IRA Plan that the release area did not seem to be widespread and that the contaminated soil was to be removed from the site. The IRA Plan also stated that an IRA Completion Report would be submitted to the DEP within 60 days of the completion of the IRA.

Between December 15, 1998 and December 29, 1998, a total of thirty-one 55-gallon drums of contaminated soil were shipped off-site for disposal. Soil disposal costs were not included in the LSP's charges for LSP Services. Disposal costs were billed to the Town by the Prime Contractor in addition to the LSP charges.

On February 1, 1999, DEP received an IRA Status Report from the LSP, stating that a total of thirty-one 55-gallon drums of creosote-impacted soil had been removed from the

site and that "[a]dditional excavation and or sampling will be performed to complete the IRA". The Status Report consisted of a one-page letter with attachments, including hazardous waste manifests.

By June 18, 1999, the Chairman of the Town Board of Selectmen ("Chairman") sent a letter to the local State Representative expressing the Town's concern that the cost of the cleanup for this site was approaching $100,000 for testing and cleanup of an area where two barrels of creosote and the remains of an old abandoned septic system were uncovered.

On July 28, 1999, DEP received a second IRA Status Report from the LSP. This Status Report was a one-page letter that added one sentence to the text of the previous report. No additional activities appeared to have been conducted.

On December 29, 1999, DEP received an IRA Completion Report, Method 1 Risk Characterization, and Class A-2 RAO statement from the Respondent. The RAO noted that the release area was about 400 square feet in size and there was no release to groundwater, only soil. No groundwater monitoring wells were installed. According to the RAO, four post-excavation soil samples were collected at the site on October 23rd and submitted for laboratory analysis to support the RAO. The report stated that all contaminants of concern were either not detected or below applicable Method 1 standards.

Because the RAO was submitted after the applicable one-year deadline and the site defaulted to Tier IB status, the Town was required to pay the cost for preparing two IRA Status Reports, a $750 RAO fee, and a $2,600 default Tier 1B fee, even though the site work was almost entirely completed within the first few months after notification of the release.

In a letter dated January 23, 2001, addressed to the prime contractor, the Chairman asserted that the site was ready for closure by the end of 1998, but instead the project did not close for another year, resulting in additional bills to the Town in excess of $47,000, "despite the fact that there was no further remediation work to be performed in connection with the project."

On March 9, 2001, the LSP sent a letter to Town officials demanding that the Town pay the balance owed to her/him. The LSP claimed that s/he was still due to be paid $23,087 for LSP Services. The LSP stated that s/he had received $24,975 of a total due for LSP Services of $48,062 (billed at the rate of $125/hr).

The LSP stated to Board investigators that, because the project started as an emergency response, no written scopes of service or budgets were requested or prepared during the early phase of the project, there was no initial cost estimate for the project, nor did the LSP's company enter into any written contracts or agreements relating to the project.

In response to a Request for Information by the Board's investigators, the LSP stated that all time sheets, field notes, telephone records, and telephone logs were discarded after his/her reports and bills for the site were prepared and submitted.

Order to Show Cause

The Board issued an Order to Show Cause finding that this case involved more than a mere fee dispute. The LSP billed for more than 400 hours of LSP services over a period of 15 months to clean up two drums of creosote and the associated contaminated soil. The Board found the LSP was unable to provide documentary evidence to back up many of his claims.

The LSP submitted invoices for a total of 217.5 hours of work for the period from September 30, 1998 through December 31, 1998 ("1998 Period"), including charges for "DEP Interface" on at least 14 occasions and "Laboratory Interface" or "Lab Interface" on 14 occasions. Without supporting documentation submitted by the LSP or elsewhere in the record, the Board, in its Oder to Show Cause, found that there was insufficient evidence to substantiate the LSP's claim that s/he performed 217.5 hours of work during the 1998 period. DEP records showed contacts were made with the LSP on only five occasions during the same period, and each contact was less than thirty minutes. Without documentary or other evidence to support the LSP's invoices, the Board found that the LSP's assertions regarding "DEP Interface" were not credible. Also, only two sampling events occurred in 1998 consisting of eleven soil samples and one water sample, thus the Board found that the LSP's assertions that s/he communicated with the laboratory on fourteen separate occasions were not credible.

The remainder of the billing during the 1998 Period was primarily for "Project Communications" (22 different days), "Data Review" (six different days), and "MCP Review" or "Regulatory Review" (12 different days). Given the nature of the contamination at the site, the Board found the LSP's billing for the 1998 Period to be excessive.

During the period from January 1, 1999, through December 31, 1999, ("1999 Period") the LSP continued to bill for LSP services. The LSP submitted invoices for 199.5 hours of work during the 1999 Period, after the contaminated soil was removed from the site. The LSP's invoices primarily billed for "Project Related Communications"; "Regulatory Review"; and "Project Review." The LSP also billed for preparation of two IRA status reports and a combined IRA Completion Statement/RAO Report.

Both IRA Status Reports submitted by the LSP, the first dated January 25, 1999, and the second dated July 22, 1999, consisted of a one-page letter with some attachments. The reports were dated and submitted seven months apart, but they are nearly identical. Yet, during the period from December 30, 1998, through July 30, 1999, the LSP submitted invoices for 113 hours of work. Based on its review of the two IRA Status Reports, and other evidence in the record, the Board found that, other than one site visit, the only other work performed by the LSP between December 31, 1998 and July 30, 1999, was drafting of the first one-page IRA Report and the addition of two sentences to

the second IRA Status Report. The Board, therefore, found that the billing of 113 hours for this time period was extraordinary.

The Board found that, while the LSP billed for a total of 199.5 hours of LSP Services for the 1999 Period, s/he performed only the following work: four site visits, two one-page IRA Status Reports (essentially identical), and an eleven-page IRA Completion Report/RAO.

The Board found that, given that the contaminated soil was excavated and removed from the site by the end of 1998, the Respondent's invoices submitted for the 1999 Period were inappropriate. The Board, in its Order to Show Cause, found that the combination of the inappropriate billing charges and the LSP's failure to produce any time sheets, field notes, telephone records, or telephone logs to substantiate his claims undermined the LSP's credibility. Furthermore, the Board found the LSP's statements were contradicted by the statements of Town officials and employees.

The Board found initially that many of the LSP's assertions with respect to the invoices s/he submitted for this site were not credible. The Board's Order to Show Cause thus stated a finding that a significant portion of the LSP Services billed for were not performed by the LSP. The Board also found that a significant portion of the billing was inappropriate and excessive. The Board further found that the excessive billing was intentional. Therefore, the Board found initially that the LSP violated LSP Board Rule 309 CMR 7.01(5) by engaging in acts that involve dishonesty, fraud, deceit, and lack of good moral character by billing for a significant amount of LSP Services that were never provided to the client.

The Board also found that the LSP's failure to ensure that confirmatory samples were collected on or shortly after October 30, 1998, when the final excavation occurred, unnecessarily prolonged the regulatory closing of the site. Confirmatory samples were not collected until almost 12 months later on October 23, 1999. The Board found that the LSP's lack of diligent effort contributed to a missed RAO deadline, resulting in an additional cost to the Town of $2,600 in default Tier 1B fees, a $750 RAO fee, and $39,900 in additional LSP charges for the period from December 30, 1998, when the last drums of contaminated soil were removed, through December 29, 1999, when DEP received the IRA Completion Report and RAO Statement. The Board found that the Respondent violated 309 CMR 4.02(1), which requires LSPs to act with reasonable care and diligence.

Based upon the above findings, the Board concluded that the LSP violated the Board's regulation 309 CMR 7.01(5), prohibiting dishonesty, fraud, and deceit, by billing for a significant amount of LSP Services that were never provided to the client; and (2) failed to act with reasonable care and diligence and apply the knowledge and skill ordinarily exercised by LSPs in good standing, in violation of the standard of professional conduct, 309 CMR 4.02(1). The Board determined that sufficient grounds existed to take disciplinary action against the LSP.

Adjudicatory Hearing

The LSP denied the charges in the Order to Show Cause, and requested a formal adjudicatory hearing to show why sufficient grounds did not exist for the Board to take disciplinary action or other disposition against him/her.

The hearing was held on two days in February 2006 before an Administrative Magistrate at the Massachusetts Division of Administrative Law Appeals (DALA). Both parties submitted pre-filed written direct testimony, and all witnesses appeared at the hearing and were cross-examined.

The Magistrate issued a Recommended Decision concluding that the Board had not proven that the LSP committed fraud by billing for LSP Services that were never provided to the client. The Magistrate also and determined that the LSP did not fail to exercise reasonable care by not collecting confirmatory soil samples, because the LSP's client (the prime contractor for the site) did not direct the LSP to collect the confirmatory samples until October 1999.

In its Final Findings of Fact and Rulings of Law, the Board adopted the Magistrate's conclusions that (a) the LSP worked the number of hours for which he billed the client, and (b) the delay of the final confirmatory sampling was not attributable to the LSP. However, based on the hearing record and on a finding by the Magistrate that the LSP was "inexperience[d] in this phase of LSP work," the Board concluded that the Respondent violated the Board's standard of professional conduct, 309 CMR 4.02(1), by billing to this site, which involved only a minor release and straightforward remediation, a number of hours that exceeded by multiples the range of hours it would have taken even an inexperienced LSP acting with reasonable care and applying the knowledge and skill ordinarily exercised by LSPs.

On December 5, 2008, the Board issued a Final Order imposing a six-month suspension on the LSP. As noted above, the LSP appealed the Final Order to the Superior Court. On December 22, 2009, the Superior Court affirmed the Board's decision to suspend the LSP's license for six months. In January 2010, the LSP appealed the Superior Court's decision to the Appeals Court where the case is now pending.

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LSP Board Complaint No. 00C-002

PUBLIC CENSURE

On April 1, 2002, the Board issued a Public Censure to an LSP for violations of the Board's Rules of Professional Conduct. The Complaint in this case was filed by the Department of Environmental Protection ("DEP"). The Board's findings are summarized below.

Background of Case

The property at issue has been operated as a retail gasoline station ("Site") since 1963. The Site is located adjacent to residential properties in a mixed residential and commercial area and within a Zone II for two municipal water supply wells.

Between October 1987 and September 1988, site assessments were conducted at the Site by a prior consulting firm (Firm #1). Monitoring wells were installed at the property during these investigations, and the resulting data found dissolved aromatic hydrocarbons, including benzene, toluene, ethylbenzene and total xylenes ("BTEX") in groundwater at the site.

During April and May 1990, as part of an upgrade of the gas station site, five old underground storage tanks ("USTs") were removed and five new USTs were installed. During the tank removal, petroleum contamination was discovered in the soils. In response to this discovery of petroleum-impacted soils, DEP sent a Notice of Responsibility to the PRP in April 1991.

In May 1992, chlorinated solvents and BTEX were found in groundwater at the site after five monitoring wells were installed by a second consulting firm (Firm #2). In July 1993, a Phase II Comprehensive Site Assessment report was prepared by Firm #2. In 1994, a third consulting firm (Firm #3) installed additional monitoring wells – one on the Site and three offsite in the street adjacent to and downgradient of the Site.

On January 23, 1998, the subject LSP became the LSP-of-Record. The LSP's firm collected soil samples at the Site on December 2 and 3, 1998, and collected groundwater samples on December 4, 1998. The LSP prepared a Supplemental Phase II Report ("LSP's Phase II") in December 1998. The LSP's Phase II stated that the Site is located in a Zone II area and, therefore, classified groundwater at the Site as GW-1 and GW-3. The LSP's Phase II concluded that GW-2 standards are not applicable because average annual depth to groundwater is greater than 15 feet below grade. The report stated that nearby surface water bodies are located 0.5 miles to the northwest of the site and 3,000 feet to the west.

The LSP's Phase II further stated that soil beneath the paved area of the site is considered potentially accessible and, therefore, classified as S-2, while soil beneath the building on the gas station site is isolated and, therefore, classified as S-3.

The LSP's Phase II stated that groundwater samples collected between May 1994 and October 1995 showed concentrations of BTEX and Methyl t-Butyl Ether ("MTBE") were generally above the GW-1 standards for all individual BTEX compounds and MTBE at monitoring wells located on the Site. Groundwater sampling conducted by the LSP's firm in July 1997 and December 1998 detected benzene, MTBE, and C9-C10 aromatic hydrocarbons above GW-1 standards in monitoring wells located in the street between the Site and nearby residential properties. Analyses for chlorinated solvents performed as part of the LSP's Phase II detected concentrations above GW-1 standards for groundwater at two monitoring wells located on the Site.

Soils at two borings exceeded GW-1/S-1 thresholds for volatile petroleum hydrocarbons (VPH). One boring is located in the street, adjacent to the residential properties, the second is located on the Site, in the area of the former gasoline tank field.

The LSP's Phase II stated that the "most likely" potential sources of petroleum hydrocarbon impacts included a former gasoline tankfield, product dispenser islands, product piping, and overfills/spills in the vicinity of the current gasoline tankfield. The LSP's Phase II states that the most likely potential sources of chlorinated solvents at the site are the locations of a former oil/water separator and former holding tank.

The Risk Characterization section of the LSP's Phase II identified potential human receptors as gasoline station employees, the general public, and construction and other service-related workers, but failed to acknowledge the risk characterization in the first Phase II report filed by Firm #2 in July 1993, which noted the possibility of exposures at off-site residential properties due to potential migration of contaminants. The LSP's Phase II failed to acknowledge the possibility that the occupants of the residential properties are potential human receptors and failed to discuss any exposure pathways, exposure points, or exposure point concentrations with respect to these nearby residents. The LSP's Phase II did not even acknowledge the existence of the residential properties located directly across the street from the Site and in the path of the contaminant plume. Maps included in the LSP's Phase II did not show the presence of the residential properties.

The LSP's Phase II failed to evaluate a potential Condition of Substantial Release Migration, despite earlier reports indicating that groundwater velocity at the site suggested the possibility of such a condition. The LSP's Phase II failed to include any site-specific calculation of groundwater velocity.

The LSP's Phase II failed to explain why method detection limits for certain groundwater samples exceeded groundwater standards. Furthermore, the conclusion section of the LSP's Phase II did not contain a discussion of the reasoning and results used to support the findings of the report.

A Notice of Audit Finding ("NOAF") and Notice of Noncompliance ("NON") were issued by DEP on April 20, 1999, citing numerous violations at the Site, and listing requirements for an Audit Follow-up Plan requiring an amended Phase II Addendum and a proposed Phase III evaluation. Among other things, the NOAF and NON required that an evaluation of the full lateral and vertical extent of contamination be conducted and included in the Phase II Addendum. The LSP's firm subsequently filed an Audit Follow-up Plan on May 21, 1999.

The LSP admitted that the residential properties directly across the street from the gas station site should have been evaluated prior to filing the LSP's Phase II, but stated that s/he could not get access to those properties to conduct assessment activities. In a letter to the LSP Board dated September 14, 2001, the LSP acknowledged that the problem of obtaining access to the downgradient residential properties should have been

discussed in the LSP's Phase II. However, according to a chronological list of access attempts attached to the letter, the first attempt by the LSP to gain access to the residential properties did not occur until May 19, 1999, one month after the NOAF was issued.

The LSP admitted that the residences were not addressed in the LSP's Phase II and that information concerning the residences should have been included in the report. The LSP stated that his/her failure to refer to exposure points and exposure point concentrations in the LSP's Phase II was an oversight. The LSP stated that indoor air testing was not conducted at the site.

The LSP acknowledged the importance of evaluating the potential for a Condition of Substantial Release Migration, and admitted that this issue should have been discussed and analyzed in the Phase II. The LSP further acknowledged that groundwater velocity at the site was not calculated prior to the issuance of the NOAF. The LSP also admitted that historical data were not discussed in the LSP's Phase II and should have been included in the report.

The LSP acknowledged that method detection limits were very high in two monitoring wells at the gas station site and that the LSP's Phase II should have included an explanation of the reason for the use of elevated detection limits for certain samples.

The LSP also acknowledged that the LSP's Phase II did not specifically attribute the petroleum hydrocarbons at the site to a specific source and, in a letter to the LSP Board dated October 22, 2001, acknowledged that an issue remained regarding the potential for a secondary source with respect to the gasoline constituents.

Summary of Findings

Based on its preliminary investigation, the Board determined that the LSP violated the following Board Rules of Professional Conduct:

> 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, by signing off on a Phase II report that failed to: (1) adequately assess the horizontal and vertical extent of contamination at the Site; (2) document or discuss the presence of or distances to nearby downgradient residences; (3) document or discuss potential residential exposure pathways and exposure point concentrations; (4) document or discuss the potential for a Condition of Substantial Release Migration or the need for an Immediate Response Action ("IRA"); (5) calculate groundwater velocity; (6) discuss and analyze historical data; (7) explain why sample detection limits exceed the applicable GW-1 standards; (8) discuss potential impacts to indoor air of abutting residential properties; (9) reach a conclusion regarding the specific sources of contamination at the site; and (10) include a thorough discussion of the reasoning and results used to support the findings in the report.

309 CMR 4.03(5)(b) (currently 4.03(3)(b)), which requires that an LSP follow the requirements and procedures of M.G.L. c. 21E, and the MCP. For example, the LSP violated 310 CMR 40.0833(1); 310 CMR 40.0833(2); 310 CMR 40.0835(2); 310 CMR 40.0835(3); 310 CMR 40.0835(4)(d)3.a; 310 CMR 40.0835(4)(e)2; 310 CMR 40.0835(4)(e)3; 310 CMR 40.0835(4)(f); 310 CMR 40.0835(4)(g); 310 CMR 40.0191(1); and 310 CMR 40.0835(4)(i).

309 CMR 4.03(5)(c) (currently 309 CMR 4.03 (3)(c)), which requires an LSP to make a good faith and reasonable effort to identify and obtain information necessary to discharge his/her professional obligations. For example, the LSP failed to: (1) identify and obtain sufficient information to determine the horizontal and vertical extent of contamination at the site; (2) calculate groundwater velocity at the site; and (3) evaluate impacts to indoor air of abutting residential properties.

309 CMR 4.03(5)(d) (currently 309 CMR 4.03 (3)(d)), which requires an LSP to disclose and explain, in a waste site cleanup activity opinion, material information that may tend to support an opinion significantly different from the one expressed. For the example, the LSP failed to: (1) disclose the presence of or distances to nearby downgradient residences; (2) disclose and explain residential exposure pathways and exposure point concentrations; (3) discuss the potential for a Condition of Substantial Release Migration and/or the need for an IRA; (4) disclose and explain historical data pertaining to the site; and (5) explain why sample detection limits exceeded the applicable GW-1 standard.

The LSP waived his/her right to an adjudicatory hearing by failing to file a timely answer to the Order to Show Cause issued by the Board.

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LSP Board Complaint No. 00C-001

LICENSE REVOCATION

On June 11, 2002, the Board issued an Order revoking the LSP's license for violations of the Board's Rules of Professional Conduct. The Board also prohibited the LSP from reapplying for a license for a period of five years. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Background of Case

In its initial investigation, the Board focused on four sites at which the LSP had provided LSP services. The facts regarding these sites are summarized below.

Facts Related to Site A

The property at Site A was operated as a gasoline station from 1956 until approximately January 1999. Another gasoline station confirmed to have NAPL was located to the north of the site.

In June 1995, four monitoring wells were installed at Site A and sampled. Two wells were placed downgradient of the four USTs and dispenser pumps and two were placed upgradient. Sampling results indicated the presence of approximately six and eighteen inches of non-aqueous phase liquid gasoline ("NAPL") in the two wells downgradient of the tanks. No NAPL was detected in the two upgradient wells at that time, but analytical results for samples from these two wells indicated the presence of dissolved petroleum constituents.

On September 10, 1998, DEP was notified that 500 gallons of gasoline had been discovered missing from a 4,000-gallon UST at the site and that the UST had a hole in it that appeared to be the result of vandalism. On September 24, 1998, DEP issued a Notice of Responsibility ("NOR") to the site owners. The NOR required that the site owners submit an Immediate Response Action ("IRA") Plan that included both the removal of the UST and a plan for the assessment and recovery of the NAPL at the site.

On October 5, 1998, DEP received an IRA Plan signed by the LSP. The IRA Plan stated that, because the amount of NAPL had fluctuated on Site A even though no remedial action had taken place, it was "a reasonable inference that nothing could have been done to cause the NAPL to appear in the first place." The IRA Plan concluded that, because the source of NAPL was not from Site A, any remedial activity on the site would be irrelevant.

The IRA Plan also stated that there was no reason to remove the UST from the site despite DEP's demand that it be excavated. The IRA Plan stated that, in view of the possibility that NAPL could appear in an excavation and create a fire hazard, there was a powerful safety reason not to remove the UST.

On January 8, 1999, DEP received a Downgradient Property Status Opinion ("DPS") for the gas station property signed by the LSP. Like the IRA Plan, the DPS concluded that, because the amount of NAPL at the site had fluctuated even though no remediation was being undertaken on the property, the source of the NAPL must be from off-site. The DPS also cited as evidence for an off-site source the fact that the gasoline in the NAPL contained lead but the gasoline in the USTs at the site contained unleaded gasoline.

The DPS did not contain any specific hypotheses as to why NAPL from a presumed upgradient property might have migrated to the downgradient wells at Site A but not the upgradient wells. The DPS did not discuss potential preferential pathways or any hydrologic connection between Site A and upgradient properties, nor any information

regarding how groundwater flow direction had been calculated or how seasonal water-table fluctuations may have been responsible for changes in NAPL thickness in the on-site wells. The DPS failed to discuss the ages, types and history of the USTs at Site A, and the likely historical usage of both leaded and unleaded gasoline at that long-term gas station location. The DPS also stated that, in 1995, all four USTs at the site had tested tight; in fact, one of the USTs failed a test in 1995.

On October 21, 1999, DEP issued a Notice of Audit Findings ("NOAF") regarding the DPS. The NOAF listed numerous violations and terminated the DPS for lack of supporting information.

Facts Related to Site B

On August 13, 1999, DEP received a Class A-1 RAO signed by the LSP regarding a fuel oil release on Site B. The property at Site B had a building on it that was used as a church. The property was surrounded by residential and undeveloped properties. The church building had an on-site septic system and a private drinking water well. Groundwater at Site B was classified as GW-1, GW-2 and GW-3; soil was classified as S-1, S-2 and S-3.

On January 7, 1999, a surficial release of between 30 and 85 gallons of #2 fuel oil occurred as a result of a leaking 275-gallon above-ground storage tank that was located on the eastern exterior portion of the church building. By March 1999, approximately eighteen (18) cubic yards of impacted soil and 600 gallons of oily groundwater had been removed from the excavation in the area of the oil release. This work was overseen by consultants other than the LSP. The LSP became LSP-of-Record in May 1999.

The RAO signed by the LSP regarding the oil release stated that "there is no evidence that contamination was found in the drinking water well only 60 feet or less away from the release, so it is unlikely that any would have left the site." The RAO stated that the depth to groundwater at the site ranged from less than 18" inches below grade during the original excavation in January 1999 to four feet below grade in May 1999. The LSP made no determination of either groundwater flow direction or groundwater velocity. While not discussed in the RAO, the LSP acknowledged that all the private residences in the vicinity of Site B had private drinking water wells; however, the RAO did not discuss the potential for these wells to be affected by the release at Site B.

The RAO stated that two soil samples collected by a former LSP-of-Record for the site indicated Extractable Petroleum Hydrocarbon ("EPH") fractions above applicable standards. The RAO stated that these results were:

> not characteristic of No. 2 heating oil nor of the contamination in the bottom of the excavation but [the EPH fractions] were used by the laboratory to 'spike' the samples for calibration purposes. [The lab

> results] are thus more likely to represent laboratory error than site contamination.

Other than the statement quoted above, no other information was provided in support of the contention that the results were due to laboratory error.

The actual laboratory reports for the samples collected by the prior LSP-of- Record indicate that, consistent with typical Quality Assurance/ Quality Control ("QA/QC") procedures, the laboratory spiked a separate sample with parameters of interest and that the two samples the Respondent contended had been tainted through the introduction of certain chemicals for calibration purposes had not, in fact, been spiked.

While the RAO discounted the accuracy of the soil results that indicated the presence of contaminants, the report relied on other soil sampling results indicating no contamination, even though those samples had been collected by the same prior LSP-of Record and analyzed by the same laboratory.

For the purposes of the RAO, only a single new soil sample was collected. The sample was tested for EPH only; analytical results were non-detect. The RAO stated that this sample was collected from the "bottom" of the excavation but the exact sample location was not indicated on any site map. The RAO stated that this "bottom" sample "replaced" the two soil samples collected by the previous LSP-of-Record that had indicated EPH fractions above standards.

The RAO concluded that the tap water from the private well below the church foundation showed no contamination. This conclusion was based upon the results of two tap water samples collected by the prior LSP-of-Record; no new samples were collected for the RAO. The reporting limits for the analyses of both tap water samples exceeded the GW-1 criteria for benzo(a)anthracene and benzo(a)pyrene.

The samples relied upon by the LSP for the RAO were not tested for VPH, despite the fact that DEP guidelines specify that tests for Volatile Petroleum Hydrocarbons ("VPH") as well as EPH be run on samples contaminated by "fresh" fuel oil, as would be expected at this site.

The RAO omitted important details about the site. For instance, the boundaries of the disposal site were not indicated on any site map. The site map included in the RAO did not indicate compass directions and had no scale. The location of neither the "bottom sample" nor the private drinking water well was indicated. Information on the depth and construction of the on-site well was not provided.

The LSP has stated that the fuel oil spill, estimated to be between thirty and eighty-five gallons, should have been handled as a Limited Removal Action which does not require reporting to DEP. The Respondent apparently was unaware that, pursuant to the MCP requirements at 310 CMR 40.1600, any oil release greater than 10 gallons must be reported.

On January 10, 2000, DEP issued an NOAF regarding the RAO listing numerous violations.

Facts Related to Site C

Site C was part of a gasoline service station property. In June 1995, two USTs were excavated and removed from the property. On June 20, 1995, DEP was notified of a release at Site C based on high headspace readings for soil samples collected from the excavation. Because Site C was located in a Zone II area of contribution to a municipal water supply, groundwater at Site C was classified as GW-1.

Initially DEP granted approval for the removal of 200 cubic yards of contaminated soil from Site C as a Release Abatement Measure ("RAM"). On June 21, 1995, the Respondent sought and received approval from DEP for the removal of an additional 200 cubic yards of contaminated soil, for a total approved volume of 400 cubic yards.

On October 19, 1995, DEP received an RAO transmittal form signed by the LSP for the release associated with the tank excavation. Even though approval had been sought for the removal of only 400 cubic yards, the transmittal form stated that 700 cubic yards of contaminated soil had been removed from the site. The form also stated that an attached Tank Closure Report, prepared by a consulting company unaffiliated with the LSP, constituted documentation for a Class A-2 RAO for the release.

The Tank Closure Report stated that analytical results for soil samples collected from the four walls and bottom of the UST excavation revealed no contamination above Method 1 Risk Characterization standards. The Tank Closure Report also stated that analytical results for groundwater samples from three monitoring wells at Site C indicated that Total Petroleum Hydrocarbons ("TPH") were present above applicable Method 1 standards. While the Method 1 GW-1 standard for TPH was 1 mg/l, TPH was found at 5.67 mg/l, 4.80 mg/l, and 1.77 mg/l, respectively. Despite the fact that contamination existed at the site above applicable standards, the LSP filed an RAO opining that the site did not pose a significant risk.

Technical information necessary to support an RAO opinion (such as drilling methods, soil boring logs, monitoring well completion diagrams, groundwater elevations, flow direction, groundwater and contaminant contour maps, contaminant migration patterns, field surveying data and aquifer characterization parameters) was absent from the LSP's submission. On April 24, 1996, DEP issued an NOAF regarding the RAO that listed numerous violations.

Facts Related to Site D

Site D was located on property that was part of a quarry and asphalt plant. During the removal of a diesel fuel UST from the property on September 23, 1998, evidence of a

diesel fuel release was discovered. On that same date, a gasoline UST was also excavated from a different area of the property. On November 23, 1998, DEP received a Release Notification Form ("RNF") signed by the LSP regarding the diesel fuel release.

On April 15, 1999, DEP issued a document entitled Notice of Deficiency ("Notice") regarding the RNF. In the Notice, DEP noted a number of deficiencies in the RNF including, without limitation, that the applicable soil and groundwater reporting categories were incorrectly identified. DEP stated that the applicable soil and groundwater reporting categories were RCS-1 and RCGW-1, respectively. DEP stated that, in accordance with 310 CMR 40.0362, groundwater at the site was subject to the RCGW-1 criteria because the site was 500 feet or more from a public water supply distribution pipeline.

After DEP issued the Notice, the LSP wrote letters to the site owner and to DEP staff members stating that, based on his/her interpretation of the Massachusetts Contingency Plan ("MCP"), groundwater at Site B should not be classified as RCGW-1.

On June 7, 1999, DEP received a RAM Plan signed by the LSP. The RAM Plan submittal consisted of RAM Plan transmittal forms, laboratory data for a single soil sample collected from an on-site soil stockpile in May 1999, and a one-page letter from the LSP. The letter stated that the levels of contamination in the soil were below standards and, therefore, the soil did not constitute a remediation waste. The RAM Plan stated that the stockpiled soil would be transferred to some unspecified location where it could be used as fill or aggregate.

On June 23, 1999, DEP issued a Notice of Deficiency ("Notice") regarding the RAM Plan. The Notice noted a number of deficiencies including, without limitation:

- the sampling and analysis presented in the RAM Plan were insufficient to adequately characterize the stockpiled soil because the RAM Pan was based on a single soil sample and tests on that sample were run for some but not all contaminants of concern;
- contrary to the opinion expressed in the RAM Plan, the stockpiled soil was remediation waste that had to be managed in accordance with the MCP;
- the RAM Plan failed to demonstrate that the stockpiled soil would not be disposed or reused at a location were existing concentrations of oil and/or hazardous materials were lower than those present in the stockpiled soil; and
- no site plan or sketch indicating the proposed locations for soil reuse and no analytical data regarding the soil in those locations were included as required by the MCP.

The Notice also stated that DEP would not consider itself in receipt of a RAM Plan regarding the stockpiled soil until a RAM Plan was submitted that included all the required information.

The LSP advised the site owner that a revised RAM Plan was not required to be submitted after the original RAM Plan was rejected by DEP as incomplete. A corrected RAM Plan was never submitted regarding the stockpiled soil. Instead, on July 7, 1999, DEP received a Class B-1 RAO signed by the LSP regarding the diesel and gasoline tank excavations.

The RAO reiterated the Respondent's contention that DEP was wrong in its assertion that RCGW-1 applied to the site and also stated that the deficiencies DEP noted regarding the RAM Plan were irrelevant. The RAO opined that 'no significant risk' existed at the site and concluded by recommending that the stockpiled soil on the site be used "as aggregate in making asphalt paving or be used as fill on workroads on the site where it can reasonably be expected that there is similar levels of contamination from small, non-reportable, releases." The RAO did not specify any locations where the stockpiled soil might be placed.

On September 17, 1999, DEP wrote a letter to the site owner stating, among other things, that, because the site owner chose to manage the soil after submission of the RAO, the management of the soil was being conducted without DEP review or approval.

Even though remedial actions had been taken at Site D, including the removal of soil from the tank excavation and the proposed on-site reuse of that soil, the LSP filed a Class B-1 RAO. Pursuant to 310 CMR 40.1046, Class B RAOs apply only where remedial actions have not been conducted.

E. Conclusions of the Board

The Board determined, based on the consistently poor quality of the LSP's work, that the LSP did not appear to understand some of the fundamental principles of site assessment or risk characterization and did not appear to have a strong command of the MCP. The Board also determined that the LSP was not in compliance, and would not be in compliance routinely and on a continuing basis, with the standards and requirements applicable to hazardous waste site cleanup professionals. The Board also took into consideration the fact that the overall poor quality of the LSP's work could pose a potential risk to public health, safety or the environment.

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1), by failing to act with reasonable care and diligence in regard to the four separate sites outlined above. Examples of conduct by the Respondent that violated this regulation included, without limitation, the following:
  (a) In the case of the DPS Opinion for Site A, the LSP:

- counseled his/her clients against removal of a UST from the site after it had been found to have a hole in it and after DEP had ordered the UST be removed;
- failed to provide adequate support for the contention that Site A was not the source of any of the NAPL; and
- failed to make clear certain site-specific facts that weighed against filing for downgradient property status such as: the property's use as a gasoline station since 1956; the fact that one of the USTs at Site A had failed a tightness test in 1995; the fact that leaded gasoline must have been stored in the USTs at Site A at some time in the past; and the detection of NAPL most often in the monitoring wells downgradient of the on-site USTs.

(b) In the case of the RAO for Site B, the LSP:

- failed to sample groundwater at Site B before submitting an RAO opinion, even though the depth to groundwater at the site was less than five feet and private wells were located both on the site and at private residences in the vicinity;
- failed to calculate the direction of groundwater flow at the site before submitting an RAO opinion and stated that, because no contamination was found in the private well on site, contamination was not migrating off-site and the determination of groundwater flow direction was unnecessary;
- failed to determine groundwater velocity at the site, and, therefore, had no way of knowing whether contamination could migrate to the on-site private well or elsewhere in the future; and
- indicated a significant misinterpretation of laboratory procedures in stating that laboratory results collected by a former LSP-of-Record were tainted by laboratory QA/QC procedures.

(c) In the case of Site C, the LSP:

- submitted an RAO based on a Method 1 risk assessment when data indicated the presence of TPH in groundwater above the Method 1 standard; and
- prepared an RAO transmittal form indicating that 700 cubic yards of contaminated soil had been removed from the site even though DEP had given permission for the removal of only 400 cubic yards, indicating the LSP was involved in conducting unauthorized RAM activities.

(d) In the case of Site D, the LSP:

- advised his/her client to disregard DEP's interpretation that groundwater at the site was subject to RCGW-1 criteria even though the MCP regulations were clear that RCGW-1 applied;

- prepared a deficient RAM Plan;
- advised his/her client that a revised RAM Plan describing proposed reuse of stockpiled soil on the site was not required; and
- filed a Class B-1 RAO even though remedial actions had been undertaken at the site.

- 309 CMR 4.03(3)(b), by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

- 309 CMR 4.03(3)(c), which requires an LSP to make a good faith and reasonable effort by, among other things:
  - in the case of the DPS opinion for Site A, failing to collect sufficient data regarding such factors as groundwater flow direction, seasonal groundwater elevations, preferential pathways or hydrologic connections between Site A and any upgradient sites; and
  - in the case of the RAO opinion for Site B, failing to sample groundwater, especially considering the depth to groundwater was less than five feet and that private wells were located on the site and at nearby residences; failing to calculate the direction of groundwater flow or to determine groundwater velocity; and failing to test soil and groundwater for VPH.

- 309 4.03(3)(d) by, among other things:
  - in the case of the DPS opinion for Site A, failing to make clear certain site-specific facts that weighed against filing for downgradient property status; and
  - in the case of the RAO for Site B, discounting prior analytical results indicating the presence of contamination without adequate justification.

The LSP elected not to contest these charges at an adjudicatory hearing.

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LSP Board Complaint No. 99C-020

LICENSE REVOCATION

On October 15, 2004, pursuant to an Administrative Consent Order ("ACO"), the Board revoked the license of an LSP. This consent agreement resolved pending disciplinary charges asserting that the LSP had a pattern and practice of conducting substandard work during his/her assessment and remediation of contaminated properties in Massachusetts. Under the terms of the ACO, the LSP was also prohibited from reapplying for a license from the LSP Board until May 15, 2008.

The disciplinary proceeding against this LSP began when DEP filed a complaint with the LSP Board alleging that its audits of the LSP's work at several sites had revealed a pattern of poor performance. As evidence of this pattern, DEP cited multiple instances of violations of similar MCP requirements at different hazardous waste sites. Thereafter, a Complaint Review Team ("CRT") appointed by the Board conducted a thorough investigation of these allegations. This CRT also examined the LSP's work at a number of additional sites to determine whether the charge of a broader pattern of violations was supported. After confirming many of DEP's allegations and finding several problems with the LSP's work at the additional sites examined, the CRT expanded its investigation substantially, conducting one of the most extensive investigations in the LSP Board's history. As a result of this investigation, the CRT found multiple violations that it believed demonstrated a pattern of poor performance that warranted disciplining this LSP.

Before the CRT had completed writing a report of its findings, the LSP Board and the LSP entered into an ACO in which the LSP agreed to the revocation of his/her license. Pursuant to this agreement, the LSP Board formally charged the LSP (in an Order To Show Cause or "OTSC") with violations of the Board's Rules of Professional Conduct at six contaminated properties, and the LSP submitted a formal opposition to those charges ("LSP's Answer"). The ACO resolved this adjudicatory proceeding without requiring the LSP Board to make formal factual or legal findings.

Summary of Charges

The formal charges filed against the LSP in the OTSC asserted that the LSP had conducted inadequate assessments and/or cleanups at six different contaminated properties. According to the OTSC, the LSP had violated the Board's Rules of Professional Conduct including, but not limited to:

- 309 CMR 4.02(1), for failing to act with reasonable care and diligence, and by not applying the knowledge and skill ordinarily exercised by LSPs in good standing at the time the services were rendered; and
- 309 CMR 4.03(3)(b), for failing to follow the requirements and procedures set forth in applicable provisions of G. L. c. 21E and 310 CMR 40.0000 (the Massachusetts Contingency Plan or "MCP").

Examples of conduct cited in the OTSC that were alleged to have violated these Rules of Professional Conduct included, without limitation, the following:

Site A

At **Site A**, a 28-acre former tannery site with a long history of industrial use and evidence of releases and improper disposal of hazardous material, the LSP failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Failed to conduct any soil characterization.
- Failed, by obtaining groundwater samples from only four groundwater monitoring wells and two Geoprobe borings, to adequately assess groundwater contamination throughout this 28-acre site.
- Failed, by obtaining only one round of groundwater samples, to adequately assess the groundwater and to evaluate seasonal variations in those areas where the monitoring wells and Geoprobe borings were placed.
- Failed to properly evaluate all potential source(s) of OHM by installing three of the four monitoring wells in areas of the site that were likely to be considered either background locations or upgradient of known or suspected contaminated areas.
- Failed to conduct additional groundwater investigation in the area to the south of Building #34 where high levels of vinyl chloride had previously been identified in the groundwater.
- Failed to assess the risk posed by the presence of metals detected in groundwater at concentrations above the applicable MCP Method 1 GW-3 Standards. In the only sentence in the RAO Report that purports to be pertinent to the risk posed by metals detected in the groundwater, the LSP inappropriately stated: "Groundwater samples collected from [XXX]-4 and GP-5 detected natural levels of metals, none of which exceed the Method 1, GW-2 Standards as outlined in the MCP." Not only is there no supporting information for concluding that these two samples from previously contaminated areas contained natural background levels of metals; the MCP contains no MCP Method 1 GW-2 Standards for metals.
- Failed to investigate the groundwater at sufficient depth to be able to assess the likely presence of dense non-aqueous-phase liquids ("DNAPL") from chlorinated solvents.
- Failed generally to define the horizontal and vertical extent of each type of contamination at the site.
- Failed to investigate the on-site dry wells and ungrouted brick and cobblestone sewers and catch basins as potential ongoing sources of groundwater contamination by oil and/or hazardous material.
- Failed generally to adequately identify and characterize each source of contamination at the site and to provide supporting documentation that each source of contamination at the site had been eliminated or controlled.
- Failed to provide any information in the RAO Report regarding the capping of pesticide-contaminated soils near Building #34. Previous reports and correspondence contained within the RAO Report appendices indicated that levels of up to 53 mg/Kg of DDT remained at the site, exceeding the S-1, S-2, and S-3 cleanup standards for DDT. In order to maintain the cap as part of a permanent solution with respect to these soils, an AUL supported by a Method 3 Risk Characterization would have been necessary. The RAO Report provides no information on remaining levels

of other pesticides, Exposure Point Concentrations for pesticides, or a determination as to their potential impact to ground or surface water.
- Failed to demonstrate that a condition of No Significant Risk was achieved at the site.

At **Site A**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Failed meet the performance standards for RAOs required by 310 CMR 40.1004 by, among other things, failing to support the RAO with assessments and evaluations that were of sufficient scope and level of effort to characterize the risk of harm to health, safety, welfare, and the environment posed by the site or that were commensurate with the nature and extent of the releases at the site.
- Failed to document that all sources of oil and/or hazardous material were eliminated or controlled, as required by 310 CMR 40.1003(5) and 40.1035(2)(b).
- Failed to define the boundaries of the disposal site, as required by 310 CMR 40.1056(2)(a).
- Failed to obtain and document adequate information about the geology and hydrogeology of the site to complete a Risk Characterization, as required by 310 CMR 40.0904(1), by, among other things,
    (a) failing to obtain groundwater elevations and other basic information needed to produce a groundwater flow map; and
    (b) failing to obtain information about soil types, depth to bedrock, bedrock type, and permeability of soils and bedrock.
- Failed to obtain and document adequate information about the extent of releases at the site to complete a Risk Characterization, as required by 310 CMR 40.0904(2), by, among other things,
    (a) failing to provide adequate information – or any information at all – about the horizontal and vertical extent of soil contamination; and
    (b) failing to provide adequate information about the horizontal and vertical extent of the groundwater contamination.
- Failed to provide technical justification explaining why the presence of metals in groundwater was attributed to background, in violation of 310 CMR 40.0193(2) and 40.0191.
- Failed to adequately identify all probable exposure pathways, as required by 310 CMR 40.0925, by, among other things,
    (a) providing no information regarding inhalation of air or potential indoor air exposures, concern for which was raised by the GW-2 exceedances noted at four different monitoring wells in the 1980s;
    (b) providing inadequate information regarding potential pathways, exposure points, and Exposure Point Concentrations related to

the dry wells, wastewater conveyance systems, building trenches, sumps, and drains;

(c) providing no information regarding potential exposures to contaminated soils; and

(d) failing to adequately assess the risk posed by the presence of metals in groundwater.

- Failed to ensure that the analytical data used in support of the RAO Opinion were of a level of precision and accuracy commensurate with their use, as required by 310 CMR 40.0017(1), by, among other things, relying on laboratory analytical sheets containing vinyl chloride results for which the detection limit (10 µg/L) was above the level of concern (GW-2 standard is 2 µg/L).
- Failed to apply an AUL to the capped pesticide area, as required by 310 CMR 40.1012.
- Failed to demonstrate that a condition of No Significant Risk existed or had been achieved at the site, as required by 310 CMR 40.1003(1) and 40.1035(2)(a).
- Failed to evaluate the feasibility of reducing the concentrations of OHMs to levels that achieved or approached background conditions, as required by 310 CMR 40.1022(3).

Site B

At **Site B**, a 5.7 acre property in an industrial park where previous operations had included machining and parts cleaning, the LSP, who was retained by the PRP's environmental consultant, failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Failed to investigate (or to ask the PRP's consultant to investigate) the elevated levels of TPH and VOCs that had been detected previously in the vicinity of the onsite septic system.
- Ignored or failed to further examine the available groundwater analytical data from bedrock monitoring wells, which indicated that concentrations of contaminants of concern exceeded the applicable MCP Method 1 GW-2 Standards.
- Failed to review the consultant's RAO Report carefully enough to note the inappropriate risk characterization for chloroethane, which was based on the MCP Reportable Concentration in the absence of an MCP Method 1 Groundwater Standard.
- Failed to advise the consultant that a RAM was unnecessary for assessment activities only and that it was unnecessary to submit both an RAO and a Tier Classification.
- Failed to demonstrate a condition of No Significant Risk existed or had been achieved at the site.

At **Site B**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Failed to document that all likely sources of oil and/or hazardous materials, including the septic system, were eliminated or controlled, as required by 310 CMR 40.1003(5) and 40.1035(2)(b).
- Failed to employ Response Action Performance Standards ("RAPS"), as required by 310 CMR 40.0191, by (a) not considering relevant guidance issued by DEP, namely DEP's 1995 *Guidance For Disposal Site Risk Characterization,* when calculating the average concentration of TPH; and (b) not employing investigative practices that were scientifically defensible and of a level of precision and accuracy commensurate with the intended use of the results of such investigation.
- Failed, in determining an Exposure Point Concentration for TPH using only the consultant's 1996 data and not providing technical justification for dismissing the historical data, to identify an arithmetic average concentration that provided a conservative estimate of the concentration, as required by 310 CMR 40.0926(3).
- Failed, in violation of 310 CMR 40.0942(1)(a), to use a permissible risk characterization standard for chloroethane in the absence of a Method 1 Standard.
- Failed, in violation of 310 CMR 40.0973(7), to demonstrate in connection with the bedrock monitoring well data that a condition of No Significant Risk existed with respect to these levels of contamination.
- Failed to demonstrate when signing this Class A-2 RAO that a condition of No Significant Risk existed at the site, as required by 310 CMR 40.1035(2)(a).

Site C

At **Site C**, a property containing three residential apartment buildings at which USTs had recently been excavated and removed (Excavations A, B, and C), the LSP failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Performed only a single post-remedial groundwater sampling event in Excavations A and C, performed this sampling only 12 days after the application of Fenton's Reagent, collected groundwater from only one well in each excavation, collected one of the samples from an injection well, and, collected the other sample from a well located in backfill material where the Fenton's Reagent was likely to pool and was surrounded by injection wells. The post-remedial groundwater monitoring also did not evaluate groundwater downgradient of the release and injection area, did not allow sufficient time to assess the potential rebound in contaminant concentrations, and did not take into account the seasonal groundwater variation.

- Conducted only a single round of post-remedial sampling from Excavation B, performed this sampling only 14 days after the Fenton's application, and sampled only injection wells. This sampling was insufficient to evaluate the potential rebound in contaminant concentrations and did not take into account seasonal groundwater variation.
- Failed to conduct further evaluation of indoor air impacts and any Critical Exposure Pathways, and failed to provide documentation or adequate explanation to support his/her assertion that the detected concentrations in the basement indoor air samples were associated with background conditions such as the use of petroleum compounds in the basement, despite the fact that the levels of C5-C8 Aliphatics may have been affected by the Fenton's Reagent applications, increasing in one building and decreasing in another.

At **Site C**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Either (a) failed to employ RAPS, as required by 310 CMR 40.0191, by not employing investigative practices that were scientifically defensible and of a level of precision and accuracy commensurate with the intended use of the results of such investigation when s/he placed air sample SUMMA canisters within the furnace rooms and/or maintenance shop of the three adjacent apartment building complexes; or (b) failed in violation of 309 CMR 4.05 to promptly notify his/her client of the obligation to report a Condition of Substantial Release Migration when petroleum vapor was identified in the air samples collected in the basement of the residential buildings. Such a condition is required by 310 CMR 40.0313 to be reported to DEP within 72 hours of when the PRP obtains knowledge of the condition.
- Failed to evaluate the degree of hazard associated with the indoor air impacted with petroleum concentrations above DEP background levels, in violation of 310 CMR 40.0414(1).
- Failed in violation of 310 CMR 40.0445 to submit a RAM Status Report or RAM Completion Report within 120 days of RAM Plan approval. The RAM Completion/RAO was filed six months after the revised RAM Plan and Addendum submittal were approved.
- Violated RAPS at 310 CMR 40.0191 when s/he collected soil sample B-7 (south of Excavation A) at a shallower depth than other samples and at a different depth than the depth where the former post-excavation TPH exceeded the applicable RC. Furthermore, this soil sample was analyzed for TPH when the other soil samples were analyzed for EPH.
- Failed to define the extent of petroleum impact to soil before submitting the RAO, in violation of 310 CMR 40.0904(2). For example, the vertical extent of petroleum impact was not further defined when PID headspace screening of boring soils indicated an increasing concentration with depth in Excavation C. Also, no borings were placed east of Excavation B even

though post-excavation results identified the highest concentrations on the east side.

- Failed after application of the remedial additives to conduct groundwater monitoring in compliance with 310 CMR 40.0046 by (a) concluding all the monitoring only 12 or 14 days after application of the remedial additives (likely too soon to adequately assess any rebound effect) and (b) monitoring only at points of application and not also upgradient and downgradient. Section 40.0046 of the MCP requires that monitoring occur at regular intervals of three months to detect any migration of the contamination, the remedial additives, or their by-products.

Site D

At **Site D**, a former service station abutting a downgradient parcel containing a two-family residential structure, the LSP failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Failed to conduct adequate groundwater sampling to account for seasonal fluctuations or to obtain information on current disposal-site conditions at the time of submittal of RAO. The single round of groundwater samples used to determine EPCs for the Method 3 Risk Characterization was conducted in April 2000, fifteen months prior to the RAO submittal.
- Failed to adequately assess the downgradient residences as potential receptors. In April 2000, when conducting a full round of groundwater sampling of 18 of the 19 existing monitoring wells, the LSP failed to sample the one well directly between the service station site and the residences. No groundwater sampling was conducted on the residents' property, and no indoor air samples were collected from the residences.
- Failed to adequately assess the indoor air at the service station. Although VPH concentrations in groundwater at the service station property exceeded the applicable Method 1 GW-2 Standards, only one indoor air sample (August 2000) was collected from the service station. In addition, indoor air samples collected during the summer were not representative of the worst-case scenario.
- Failed to update and refine the rough determination of groundwater flow direction at the site, developed initially from two onsite and two off-site monitoring wells installed by the previous consultant in 1997. The LSP could have done this using the additional monitoring wells s/he installed.

At **Site D**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Failed, until after DEP sent a Notice of Noncompliance to the PRP in October 2000, to submit an IRA Plan or IRA Status Report for IRA activities conducted in the fall of 1999 regarding the service station gasoline release, in violation of 310 CMR 40.0420 and 40.0425(1).

- Submitted an IRA Completion Report containing no discussion or evaluation of whether a Critical Exposure Pathway existed or was likely to exist in the future at the abutting residences, in violation of 310 CMR 40.0414 and 40.0427(1).
- Failed as part of the RAO to define the horizontal and vertical extent of the contamination in violation of 310 CMR 40.0904(2). In particular, the disposal site was not adequately defined horizontally toward the residences to the south or the adjacent property to the east. In addition, given the increasing soil headspace readings measured at depth in the soil borings and a lack of information substantiating the depth at which background conditions were met, the vertical extent of petroleum-impacted soils had not been adequately assessed and/or documented.
- Continued response actions at the site without reporting, as required by 310 CMR 40.0317(16), the following new 120-day conditions: (1) the detection of PAH concentrations above reporting limits in the soil sample collected from GP-3 in March 1999; and (2) the detection of PAH concentrations above reporting limits in the groundwater samples collected from GP-4 and MW-1 in April 2000.
- Failed to submit a Phase II Scope of Work prior to implementing additional Phase II Comprehensive Site Assessment subsurface investigations following the submittal of the January 1999 Phase I, as required by 310 CMR 40.0832.
- Failed, as required by 310 CMR 40.0440, to conduct under a RAM Plan the tank closure activities that were performed at the site in January 2001, even though the historical data indicated that petroleum impact would likely be encountered, especially within the immediate vicinity of the dispenser islands.
- Failed to adequately assess the source(s) of the gasoline impacts observed, in violation of 310 CMR 40.0904(2). No soil borings/wells were advanced/installed within the former dispenser island or the within the former gasoline UST locations even though: (1) only composite VOC post excavation samples had been collected within the UST tank grave; (2) no post excavation soil samples had been collected in the vicinity of the dispensers; and (3) soil borings located on the east side of the dispensers suggested that the source of gasoline impact was likely the dispensers.
- Failed to adequately evaluate the source or extent of the "motor oil" petroleum release detected in 1997 at the rear/south end of the service station building, in violation of 310 CMR 40.0904. Among other things that needed further evaluation were the following: (1) the "hot spot" of PAHs in soil identified in one adjacent boring (GP-3) located cross-gradient; (2) the former existence of a used oil and/or fuel oil tank in the rear of the service station building; and (3) the impacts, if any, across the nearby residential property boundary. No borings/wells were installed downgradient of the location where the motor oil was detected.
- Failed, as required by 310 CMR 40.1003, to demonstrate that a condition of No Significant Risk existed for the entire disposal site, given that the

AUL covered only the former service station property and did not cover the areas of impacted soils identified on the northwestern portion of an adjacent auto dealer property.

- Failed to rely on an adequate Method 3 Risk Characterization, given that (1) the risk characterization used the average of all soil data collected at the site, including soil data from borings located outside and/or within different areas/sources of the disposal site; and (2) the Method 3 risk characterization used the average of the data from all groundwater samples from all the groundwater monitoring wells as Exposure Point Concentrations, despite the fact that the area for which the risk characterization was performed was not contiguous, associated with the same source, nor similarly impacted (constituents and concentrations).
- Allowed the site to be closed with a Class A-4 RAO despite the fact that one groundwater sample contained a concentration of C9-C18 Aliphatics of 696,000 ppb, exceeding the UCL of 100,000 ppb established by 310 CMR 40.0996. Although the LSP made a case for a technical justification that this result was an artifact of NAPL previously discovered in that well, his/her failure to resample that well using low-flow sampling to determine the actual groundwater concentration of C9-C18 Aliphatics meant that he/she failed to demonstrate that a UCL did not exist at that location.

Site E

At **Site E**, a former service station abutting residential apartment buildings downhill to the east and south, the LSP failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Failed to perform sufficient post-remedial groundwater assessment by sampling injection wells, in most cases, within a week of applying Fenton's Reagent into those same wells. By failing to allow sufficient time to pass before sampling, the LSP did not assess the potential rebound in contaminant concentrations or take into account seasonal variations.
- Performed inadequate post-remedial soil sampling by sampling, in many instances, above the area of previously identified contamination. Such sampling did not adequately assess the area of contamination.
- Failed to evaluate potential indoor-air impacts and potential Critical Exposure Pathways at the abutting residences, nor was documentation provided to support a conclusion that the elevated concentrations in shallow groundwater on the site would not impact the abutting downgradient residences.
- Relied on topographic contouring to estimate a generalized groundwater flow direction. A current and more precise understanding of groundwater flow direction was critical when planning the Fenton's Reagent remediation, executing it, monitoring potential migration of OHMs during and after applications, and evaluating the overall effectiveness of the Fenton's Reagent remediation.

- Failed to demonstrate a condition of No Significant Risk at the site.

At **Site E**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Failed to define the horizontal extent of the petroleum impact to groundwater, in violation of 310 CMR 40.0904(2). For example, groundwater was not assessed downgradient of two monitoring wells where contaminant concentrations were detected in excess of GW-2 Standards. These wells were located along the southern and eastern property boundaries, across both of which were residential apartment buildings.
- Failed to conduct groundwater monitoring after application of the remedial additives in compliance with 310 CMR 40.0046(4) by (a) concluding all the monitoring only two weeks after application of the remedial additives (far too soon to assess any rebound effect) and (b) monitoring only at or very near points of application and not also upgradient and downgradient. Section 40.0046 of the MCP requires that monitoring occur at regular intervals of three months to detect any migration of the contamination, the remedial additives, or their by-products. [Four months after the LSP submitted the RAO claiming that no further remediation was necessary, a DEP site inspection revealed the presence of over four feet of petroleum product floating on the groundwater.]
- Failed, in violation of 310 CMR 40.0046(1), to monitor during the Fenton's Reagent applications for potential off-gassing into the subsurface storm conduit, other underground utilities, and the adjacent residential buildings.
- Failed to clearly and accurately delineate in the RAO the boundaries of the disposal site for which the Response Action Outcome applied, as required by 310 CMR 40.1003(4) and 40.1056(2)(a).

Site F

At **Site F**, a property containing a five-story apartment building for the elderly where a 3000-gallon fuel oil UST had been removed from beneath the basement floor, the LSP failed to act with reasonable care and diligence in violation of 309 CMR 4.02(1) when the LSP:

- Failed to meet the standard of practice in the profession in September 1999 by looking for elevated concentrations of contaminants in indoor air in an apartment building for the elderly using only a PID.
- Failed to conduct adequate groundwater sampling by failing to install any monitoring wells in the presumed downgradient direction.
- Failed to conduct adequate soil sampling to determine the presence and extent of subsurface contaminated soil by failing to sample in the areas

where sidewall samples had originally demonstrated the presence of contamination and by compositing contaminated and uncontaminated soils at different depths from the borings.
- Included materially misleading statements in the RAO Report suggesting that the contaminated soil beneath the building had been removed when it had not been.
- Failed to demonstrate a condition of No Significant Risk at the site.

At **Site F**, the LSP also failed to follow the requirements and procedures of the MCP, in violation of 309 CMR 4.03(3)(b), when the LSP:

- Failed meet the performance standards for RAOs required by 310 CMR 40.1004 by, among other things, failing to support the RAO with assessments and evaluations that were of sufficient scope and level of effort to characterize the risk of harm to health, safety, welfare, and the environment posed by the site or that were commensurate with the nature and extent of the releases at the site.
- Made materially misleading statements in the RAO report suggesting that the contaminated soils had been removed, in violation of 310 CMR 40.0022.
- Failed to adequately evaluate the extent of the petroleum release, in violation of 310 CMR 40.0904(2).
- Failed to demonstrate a condition of No Significant Risk at the site, as required by 310 CMR 40.1035(2).

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LSP Board Complaint Nos. 99C-017, 99C-019 and 00C-007

LICENSE SUSPENSION

On October 12, 2004, pursuant to an Administrative Consent Order ("ACO"), the Board suspended the LSP's license for a period of three years for violations of the Board's Rules of Professional Conduct. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any wrongdoing but agreed not to contest the Board's findings and agreed to the license suspension. Under the terms of the ACO, the LSP must also retake and pass the Board's licensing examination before the LSP's license will be reinstated at the end of the suspension period. This disciplinary action resulted from two complaints, one filed by the Department of Environmental Protection ("DEP") and the other by a private party.

Summary of Findings

Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

XIII. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.02(1)** by failing to act with reasonable care and diligence in regard to the disposal sites outlined below**.** Examples of conduct that violated this regulation included, without limitation, the following:

(a) In the case of the professional services the LSP performed at Site A:

- failing to alert his/her client regarding the existence of reportable concentrations of chlorinated solvents, an apparent 120-day reportable condition, until almost a year after they were first detected;
- exceeding the operating time-line specified in the NPDES permit exclusion for the groundwater treatment system;
- failing to collect influent and effluent samples from the groundwater treatment system at the frequency required in the NPDES permit exclusion, or at a frequency to ensure proper operation of the system;
- stating in the RAO opinion that groundwater sampled after the removal of contaminated soil from the site was non-detect for petroleum when no groundwater samples were, in fact, collected after the soil removal;
- relying in the RAO opinion on groundwater data that was collected from the site five months prior to the excavation of contaminated soil;
- waiting for six months after the removal of contaminated soil to collect post-excavation samples; and
- displaying an apparent lack of attention to detail in the RAO report by, for instance, including conflicting information regarding the date when IRA-related activities were undertaken at the site.

(b) In the case of the professional services the LSP performed at Site B:

- failing to define the extent of soil or groundwater contamination at the site for the 1997 RAO report;
- erroneously stating in the 1997 RAO report that petroleum contaminants were present in groundwater at concentrations below applicable GW-1 standards when TPH had been detected in groundwater at concentrations above applicable GW-1 standards;
- including in the 1997 RAO report a data summary table that presented the analytical results in ppm and the applicable standards in ppb;
- failing to include TPH as a chemical of concern in the risk assessment relied on for the 1997 RAO Opinion even though elevated levels of TPH had been detected in soil and groundwater;
- including risk assessment calculations in the 1997 RAO report that did not comport with the analytical data for the site and that indicated a chronic Hazard Index for MTBE of 120;
- failing to discuss the TPH exceedances in the 1997 RAO report but simultaneously filing an Activities and Use Limitation for a portion of the site that stated that TPH might pose a risk;

- failing to consider TPH in scoring toxicity on the Numerical Ranking System (NRS) score sheet for the site even though TPH had been detected previously at the site;
- failing to define the extent of soil and groundwater contamination at the site for the 2000 RAO report;
- in the 2000 RAO report failing to mention the existence of 1996 data indicating soil and groundwater contamination at levels exceeding the standards that applied in 2000, and failing to resample in these locations;
- as in the case of the 1997 RAO report, including in the 2000 RAO report a groundwater data summary table that reported the applicable standards and the site concentrations in different units of measure;
- relying on VPH analytical results for soil samples that had not been preserved with methanol; and
- displaying an apparent lack of attention to detail in the 2000 RAO report by, for instance, making inconsistent statements regarding the number of soil borings at the site and failing to include boring logs.

(c) In the case of the professional services the LSP performed at the disposal site at Site C:

- neglecting to submit the RAO to DEP by August 6, 1998, the one-year deadline, thereby causing the client to unnecessarily incur a Tier 1B fee of $2,600..

(d) In the case of the professional services the LSP performed at certain disposal sites:

- submitting risk assessments that were not performed by a qualified risk assessor and were outside the LSP's areas of expertise; and
- submitting, as part of a phased IRA, asbestos abatement plans that had not been prepared or reviewed by a Massachusetts certified Asbestos Project Designer, despite DEP's request for this.

XIV. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(b)** by failing at the sites described below to follow all the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000.

XV. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(c)** by, among other things:

- in the case of Site A, failing to collect influent and effluent samples at a frequency to ensure proper operation of the system;
- in the case of the RAO opinion for Site A, failing to collect groundwater data after the excavation of contaminated soil from the site; and

- in the case of both the 1997 RAO Opinion and the 2000 RAO Opinion for Site B, failing to collect sufficient soil or groundwater data to adequately define the extent of contamination.

IV. The LSP failed to comply with the Board's Rule of Professional Conduct at **309 CMR 4.03(3)(d)** by, among other things:

- erroneously stating in the 1997 RAO report for Site B that petroleum contaminants were present in groundwater at concentrations below applicable GW-1 standards when TPH had, in fact, been detected in groundwater at concentrations above applicable GW-1 standards; and
- failing to mention in the 2000 RAO report for Site B the existence of 1996 data indicating soil and groundwater contamination at levels exceeding the standards that applied in 2000, and failing to resample in these locations.

Background of Case

Based on the preliminary investigation conducted by two different Complaint Review Teams (one for 99C-017 and 99C-019, and another for 00C-007), the pertinent facts regarding each disposal site were determined to be as follows. The LSP will have an opportunity to challenge these findings during the adjudicatory proceeding.

Facts Related to Release #1 at Site A

On December 15, 1998, the LSP reported a release of gasoline at Site A to DEP as a result of measuring volatile organic compounds (VOCs) at a concentration greater than 100 ppm in soil collected during the removal of an underground storage tank (UST).

Groundwater samples were collected from two monitoring wells at the site on January 6, 1999. The analytical results for these samples indicated the presence of chlorinated VOCs, including vinyl chloride, at levels exceeding reportable concentrations. The LSP waited until December 15, 1999, almost a year after the reportable condition was first discovered, to advise his/her client of the existence of the chlorinated VOC contamination that, pursuant to the Massachusetts Contingency Plan (MCP), required reporting to the DEP within 120 days of discovery.

On May 12, 1999, the LSP sent a request to the Environmental Protection Agency for a National Pollutant Discharge Elimination System (NPDES) permit exclusion regarding a proposed groundwater treatment system at the site. The request letter stated that the project duration was estimated to be one to two weeks. On May 13, 1999, EPA issued a permit exclusion that specified contaminant limits and required a monitoring schedule. The required monitoring schedule consisted of influent and effluent sampling on two separate days during the first week of operation and once during the final week of discharge.

On May 19, 1999, the LSP submitted a written Immediate Response Action ("IRA") Plan to the DEP that proposed to remove petroleum contaminated soil and groundwater from the UST grave. The IRA Plan proposed that groundwater removed from the UST grave would be pumped into a frac tank and treated through an activated charcoal unit prior to being discharged into an on-site catch basin. The IRA plan estimated that response actions would be completed within approximately one week.

Contrary to the information provided in the IRA Plan and the LSP's letter to the EPA, the groundwater removal and treatment system was not in operation one to two weeks, but rather operated for at least seven weeks. The LSP has stated that the system operated from June 10 through July 28, 1999. Influent and effluent samples were collected on only three occasions during the seven weeks the system was in operation: June 10th, June 15th, and July 1st. While the lab reports indicate that the treatment system was operating adequately during both June sampling events, the system appears to have failed by the time of the July 1st sampling. The lab reports indicated that the effluent results were slightly higher than the influent results for some compounds and that the effluent exceeded the NPDES permit exclusion limits for benzene and total BTEX. No additional samples were collected from the treatment system between July 1 and July 28, the day the LSP says the system was shut down.

On December 23, 1999, the LSP submitted a document to DEP entitled "Immediate Response Action Completion Report and Response Action Outcome" ("Report"). The Report was inconsistent regarding the date when IRA-related activities were initiated. The Report stated that a permanent solution had been achieved at the site and that levels of oil and hazardous material related to the release were below detectable levels. Data summary tables included in the Report indicated confirmatory soil samples were collected from the excavation area on December 18, 1999, approximately six months after the contamination soil was removed from the excavation. Despite contrary statements in the risk assessment portion of the Report, groundwater was not sampled after the contaminated soil was removed from the site in June 1999. The analytical data included with the Report indicated that the conclusions in the RAO regarding groundwater were based on samples collected from two monitoring wells in January 1999, five months prior to the contaminated soil removal.

Facts Related to Site B

Site B was located on a former fuel oil distribution facility. The area surrounding the facility was residential and all of the residential properties were served by private wells. In 1978 a release of 20,000 gallons of No. 2 fuel oil had occurred at the property as a result of a failed manifold valve.

In January 1996, all known storage tanks were removed from the property. During removal, two holes were observed in a 275-gallon underground storage tank. Analytical results for a groundwater sample collected from the 275-gallon UST excavation and groundwater samples collected from two test pits on the property indicated the presence of total petroleum hydrocarbons ("TPH") at concentrations

exceeding the applicable GW-1 reportable concentration. As a result, a release was reported to DEP on March 19, 1996.

On June 18, 1997, the LSP submitted to DEP a Phase I Report and Class A-3 RAO Report ("RAO Report") regarding remedial activities undertaken at the site. An Activities and Use Limitation (AUL) was also filed with the RAO Report. In the RAO Report, the LSP classified groundwater as GW-1 and GW-3, and soil as S-1, S-2, and S-3. The RAO Report was based on a Method 3 risk assessment.

The LSP did not adequately define the extent of contamination at the site, and incorrectly identified exposure point concentrations. As indicated in the analytical data filed with the RAO Report, a soil sample collected in May 1996 from a soil boring/monitoring well MW-3 located downgradient of the 275-gallon UST grave indicated the presence of TPH and the PAH 2-methylnapthalene at concentrations above Method 1 S-1 standards. A groundwater sample collected in May 1996 from this well indicated TPH at a concentration of 600 ppb (Method 1 GW-1 standard was 1,000 ppb). No additional soil or groundwater samples were collected from MW-3 prior to the filing of the RAO Report. In addition, no monitoring wells or borings were placed in the vicinity to define the extent of contamination in this area. Therefore, the single soil sample and single groundwater sample were used to define the Exposure Point Concentration in this area of the site. In addition, even though a single groundwater sample taken from one test pit had indicated the presence of TPH at a concentration above the GW-1 standard, no monitoring wells were placed in this location to define the extent of contamination.

The RAO Report also erroneously stated that groundwater samples taken from the three test pits and the UST excavation contained petroleum-related hydrocarbons at concentrations below GW-1 standards. As stated above, the TPH concentrations in groundwater from one of the three test pits was above GW-1 standards. The RAO Report referred to a groundwater analytical data summary table that was misleading because the analytical results were presented in ppm while the applicable standards were presented in ppb. As a result of the different units of measure, it first appears, in looking at the table, that TPH concentrations did not exceed GW-1 standards when, in fact, they did at one location.

Despite the fact that elevated levels of TPH had been detected in soil and groundwater at the site, TPH was not included as a contaminant of concern in the Method 3 risk assessment. In addition, the risk assessment calculations included with the RAO did not appear to comport with the data collected from this site. The calculations stated that MTBE had been detected in groundwater at a concentration of 0.36 ug/l, but the analytical data in the RAO Report did not indicate that MTBE had been, in fact, found at the site. Also, the calculations indicated a chronic Hazard Index for MTBE of 120. Pursuant to the Massachusetts Contingency Plan, any Hazard Index greater than 1 is indicative of potential risk.

Even though the Method 3 risk assessment concluded that there were no health risks associated with residual contaminants on the site because there was no potential for exposure, the LSP filed an Activity and Use Limitation opinion for soils in the area around MW-3. The risk assessment did not discuss any use restrictions to limit exposure at the site and did not even mention that an AUL had been filed. In the AUL Opinion, the LSP stated that a risk might exist related to TPH compounds found in soil. As stated above, TPH was not considered in the risk characterization that formed the basis of the LSP's RAO Opinion.

On May 28, 1998, the DEP issued a Notice of Audit Finding/Notice of Noncompliance (NOAF/NON) regarding the RAO Report. The NOAF also required that the AUL be terminated.

On July 21, 1998, the DEP received a letter from the LSP retracting the RAO and terminating the AUL. The LSP attached a completed Numerical Ranking System (NRS) Scoresheet classifying the site as Tier II. In scoring toxicity for the NRS, the LSP did not consider TPH even though it had been detected previously at the site.

On March 24, 2000, the LSP filed another document with the DEP entitled "Phase II Comprehensive Site Assessment/RAM Completion Statement/Response Action Outcome" ("2000 RAO Report"). The Respondent used Method 1 to assess risk at the site and filed a Class A-2 RAO claiming that a Permanent Solution had been achieved.

In response to DEP's requirement that additional assessment be conducted, the 2000 RAO Report stated that additional investigation work had been undertaken at the site in May 1998 in the areas of a former on-site retention basin and downgradient of the four USTs that had been the site of the 1978 20,000-gallon fuel oil release. While the 2000 RAO Report indicated in some sections that ten soil borings had been installed and sampled, the previously submitted RAM Plan and other sections of the 2000 RAO Report stated that only six borings were advanced in May 1998. The 2000 RAO Report did not contain any detailed discussion of these borings or copies of boring logs.

The 2000 RAO Report stated that the results of the May 1998 investigations indicated that TPH contamination existed at depths of up to 10 feet in the former leaking 275-gallon UST location, and surficial contamination existed within the former concrete berm, around the former lagoon, and around the former storage tanks. In October 1998, RAM activities were conducted that included the excavation of 380 cubic yards (cy) of contaminated soil from these areas.

On November 10, 1998, confirmatory soil samples were collected from the sidewalls and bottom of the former lagoon and the former 275-gallon UST excavation. The samples were reportedly collected using a GeoProbe drill rig. No further discussion regarding sample collection or sample depths was included in the report. There was no indication as to whether the excavation was backfilled prior to sample collection or how the sidewall samples were collected with the drill rig.

The soil sample locations as depicted in the report's figures indicate that several samples may have been collected as composite samples. This is not discussed in the report. There is also no discussion regarding soil sample preservation. The samples were submitted for both EPH and VPH analyses. A review of the chain-of-custody revealed a note (apparently from the laboratory) that the VPH samples were not preserved with methanol.

On November 10, 1998, two new monitoring wells were installed near the excavation area but neither well was installed downgradient of the excavation. According to the site figure included in the 2000 RAO Report, one of the wells was installed upgradient and the other was installed somewhat side gradient of the excavated area.

The 2000 RAO Report stated that the results of the analytical samples indicated that the groundwater at the site was not contaminated, but this conclusion was not based on adequate data and also ignored 1996 data indicating concentrations of TPH above applicable GW-1 standards. The determination regarding groundwater conditions at the site was based on the groundwater samples collected in November 1998 from the two new monitoring wells. No new groundwater samples were collected from the five existing wells at the site; these five wells had only been sampled once and that was in 1996. Moreover, the concentrations of TPH detected in the groundwater samples collected from monitoring well MW-3 and two test pits at the site in 1996 were above the GW-1 standards in effect in 2000.

In addition, despite DEP's mention of the problem regarding the groundwater summary table in the NOAF for the initial RAO Report, the groundwater summary analytical table included in the 2000 RAO Report, as in the case of the 1997 RAO Report, presented the analytical results in ppm and the applicable Method 1 standards were presented in ppb.

The 2000 RAO Report stated the level of soil contamination was below applicable Method 1 standards; however, previous soil data from the site were not discussed even though some of that data indicated contamination at concentrations above S-1 standards. The site figure included in the 2000 RAO Report indicated that none of the areas where the 1996 samples were collected were included in the soil excavation. In addition, no subsequent soil samples were collected from these areas prior to the filing of the 2000 RAO Report. To date (summer 2003), DEP has not conducted an audit of the 2000 RAO report.

Facts Related to Site C

In December 1997 and January 1998, the LSP and other members of LSP's firm prepared a Method 3 risk assessment and an AUL and Class B-2 RAO report for a disposal site, an urban used car lot, at which arsenic had been detected in two composite soil samples at concentrations of 30 ppm and 43 ppm respectively. (The reportable concentration and Method 1 standard for arsenic is 30 ppm.)

On January 20, 1998, the LSP gave the client, the property owner, an invoice for $2,637.63. Among the services listed on the invoice were the following:

- *"Prepare Activity and Use Limitation document and record with registry of deeds;*
- *Prepare Response Action Outcome Report with Activity and Use Limitation and submit to MADEP for site closure."*

At the time this invoice was submitted to the client the AUL had yet to be recorded and the RAO and AUL Transmittal Form had yet to be submitted to DEP, but the parties understood that it was LSP's intention to do so as soon as s/he received payment of the invoice.

This invoice resulted in a fee dispute. The client, who had paid the LSP for two prior invoices, claimed to be surprised by this additional invoice and refused to pay it. In response, the LSP declined to record the AUL or file the RAO.

Thereafter, the parties had various discussions about this invoice, but it took until early June 1998 for them to resolve their dispute. The resolution was achieved when the LSP agreed to drop the $812.50 charge on the invoice for the LSP's own "Licensed Site Professional" services. This reduced the amount the LSP sought to $1,825.13. On June 5, 1998, the LSP sent the Complainant a modified invoice for this amount and a cover letter stating: *"Upon receipt of payment, the Phase I and AUL documents will be filed with the MADEP. It has been since January and your immediate attention to this is necessary to avoid additional filings with the MADEP and thus incur additional costs."*

The LSP admitted that this last statement referred to the fact that August 6, the one-year deadline for filing a Tier Classification or an RAO, was fast approaching.

The LSP admitted that his firm received payment for the agreed-to amount by check on June 29, 1998. This left the LSP with 38 days, more than ample time, to file the required documents by the one-year deadline of August 6, 1998.

While the AUL was recorded at the Registry on July 17, 1998, by August 6, 1998, the Respondent had failed to file the RAO at DEP.

On August 20, 1998, the LSP mailed a letter to the city's BOH notifying officials that an RAO report "has been prepared" and an AUL "has been implemented." On August 28, 1998, the LSP published legal notice in the local newspaper regarding the AUL filing. The notice also stated that a Phase I Limited Site Investigation "has been submitted" and an RAO had been determined.

On September 10, 1998, the Respondent, or an employee or agent of the Respondent, submitted to DEP the Class B-2 RAO and Transmittal Form along with a copy of the AUL and an AUL Transmittal Form.

Due to the late filing of the RAO, DEP subsequently assessed the client a Tier IB fee of $2,600.

Facts Related to Release #2 (asbestos) at Site A

On October 17, 1997, a fire occurred on Site A at a large steel-framed building that occupied approximately six acres. The fire caused asbestos-containing tar flakes and pieces to lift off the roof and be deposited outside the building on the exterior surfaces and on the inside concrete floor area. Asbestos debris from the pipe insulation material was also released into the building. Ten days later, this release of asbestos was noticed by a DEP inspector (hereinafter "DEP Staffer") who was inspecting ongoing asbestos abatement work at another location within the building. As a result, DEP issued a Notice of Responsibility to the PRP and required an Immediate Response Action to contain and prevent the migration of asbestos fibers from the source areas and to remove the asbestos-contaminated soils, detritus, and other materials from the affected areas. The PRP retained the Respondent's firm to manage and coordinate the Immediate Response Action.

The Respondent and his/her firm had limited training and experience in asbestos abatement services. During the Board's investigation the Respondent identified only a single previous asbestos abatement project his/her firm had worked on. During this previous project, conducted in 1996, Respondent's firm had collected soil samples and had them analyzed for asbestos after an asbestos contractor had completed remediation activities.

For the instant project at Site A, the Respondent's firm requested that an asbestos abatement contractor prepare an asbestos abatement plan for Phase I of the IRA. Phase I involved building a containment structure around the exterior side section and pavement where the fire had occurred, and removing the asbestos contamination inside. The contractor's plan was attached to the IRA Plan. This IRA Plan was approved by DEP.

The IRA Plan for Phase I, which had been prepared and signed by the Respondent LSP, stated that the LSP was "a certified asbestos inspector and management planner." This statement was false, inaccurate, and/or misleading.

After the completion of Phase I in November 1997, additional asbestos removal work needed to be done, and project designs and other plans for this work needed to be prepared. To ensure that these plans were prepared in a manner that was appropriate for the tasks at hand, met professional standards, and were protective of health and safety, DEP Staffer requested that Respondent's firm work with a Massachusetts certified Asbestos Project Designer for the purpose of either preparing these designs or reviewing and approving the designs prepared by any contractor retained by Respondent's firm. DEP Staffer also requested that the final plans submitted to DEP contain the signature of the Asbestos Project Designer used by Respondent's firm.

The Division of Occupational Safety of the Department of Labor and Workforce Development certifies asbestos Project Designers in Massachusetts. Certification as an Asbestos Project Designer authorizes a consultant to design Asbestos Response Actions in Massachusetts through the preparation of job specifications, bidding documents, architectural drawings and schematic representations of material locations. Certification is valid for one year and must be renewed annually by, among other things, submitting proof that one has completed an authorized, one-day refresher course

On or about December 9, 1997, after showing the draft plans to DEP staff and obtaining their informal feedback, the Respondent formally submitted an IRA Plan for Phase II of the work, which involved vacuuming asbestos-containing material ("ACM") from the exterior surfaces of the building and the cleanup of asbestos debris on the interior of the building floor. The final paragraph of the IRA Plan states: *"This IRA Plan has been prepared by [LSP] and [Designer I], Certified Asbestos Designer.* Just below this paragraph are signature lines for the Respondent and for a "Project Designer." The Respondent stamped his/her LSP seal and signed his/her name, and on the signature line for the "Project Designer" the Respondent signed Designer I's name followed in parentheses by the Respondent's initials. Both signatures are dated December 9, 1997. During the investigation the Respondent LSP claimed that Designer I, whose office was in an adjacent state, had authorized the LSP to sign the plan for Designer I.

The statement in the Phase II IRA Plan filed with DEP that the plan had been "prepared" by the Respondent and Designer I was false, inaccurate, and/or misleading. Designer I was not among those who "prepared" the plan.

Thereafter, over the next year and a half, the LSP submitted a series of IRA Plans for successive phases of the asbestos removal work (Phase II, Phase III, Phases IV/V, and two amendments to the Phase V Plan). In each instance, the Respondent (or those under Respondent's direction and control at Respondent's firm) signed for either Designer I or a second Asbestos Project Designer. In all but one instance the actual signer's initials appeared in parentheses after the signature. In the one instance where no initials appeared following the signature, the Respondent admitted that s/he had made the signature for the Asbestos Project Designer and had simply forgotten to add his/her initials at the end of the signature.

In each of these subsequent instances, the named Asbestos Project Designer had not prepared the plans, and, in the case of at least Designer II, had not reviewed the plans or even authorized Respondent to sign Designer II's name.

The statements made by the Respondent in these various IRA Plans that the plan had been "prepared" by the Respondent "and [Designer I or II]" were false, inaccurate, and/or misleading. In fact, the asbestos remediation plans contained within the IRA Plan had been prepared by the contractor, not Designer I or II.

Facts Related to False Risk Assessor Signatures

A Ph.D. risk assessor ["Risk Assessor"] worked as a full-time employee at Respondent's firm from 1993 to about July 1996. Thereafter, for a few years, s/he continued to work for Respondent's firm part-time on a contract basis.

In July and August 1997 members of the Respondent's firm began preparing a Method 3 risk assessment for Site C (above). This risk assessment was completed in December 1997 and/or January 1998.

Due to the events described above regarding Site C, this risk assessment was submitted to DEP in September 1998 as Appendix D to a Phase I and RAO Report for this disposal site. The Class B-2 RAO purports to be based on this risk assessment and an AUL. No signatures appear on the risk assessment document itself. However, the text of the RAO Report ends with the following paragraph, just above the signatures of the LSP and Risk Assessor:

> *"The following personnel have personally examined this document and are familiar with the information contained in this document and all attachments and that, based on inquiry with those individuals immediately responsible for obtaining the information, the information is true, accurate, and complete. These individuals are aware that there are significant penalties for submitting false information, including possible fines and imprisonment."*

The signature lines set forth below this statement were for the signatures of the Respondent as LSP and "[Risk Assessor], Ph.D., Risk Assessor."

On the signature line for Risk Assessor, the Respondent signed Risk Assessor's name followed in parentheses by Respondent's own initials. The signatures are not dated.

Risk Assessor had not seen this RAO Report, and s/he had not given the Respondent permission to sign his/her name to it.

Risk Assessor had not prepared the final risk assessment that was attached to this RAO Report as Attachment D.

The statement made by the Respondent just above Risk Assessor's signature was false, inaccurate, and/or misleading in asserting that Risk Assessor had personally examined and was familiar with the information contained in the RAO Report and all its attachments.

As written, the risk assessment did not support the Respondent's conclusions in the RAO Report, and numerous specifics within the risk assessment document were inconsistent with DEP's *Guidance for Disposal Site Risk Characterization.*

The LSP Board's Order To Show Cause specifies two other instances in which the Respondent did the same thing, i.e., submitted a report to DEP identifying Risk

Assessor as having participated when, in fact, Risk Assessor had not. In each of these instances, the Risk Assessor's name was signed by Respondent, followed in parentheses by the Respondent's own initials. In both cases, Risk Assessor had not authorized Respondent to sign for him/her.

Facts Relating to Respondent's Lack of Cooperation During the Investigation

In responding to the two Complaints and in connection with the Complaint Review Team's investigation of them, the Respondent knowingly made false written statements of material fact to the Board or the Complaint Review Team. The Respondent submitted these false statements, and changed his statements over time, in an effort to exonerate himself. In doing this, the Respondent failed to cooperate fully in the conduct of the investigation by the Complaint Review Team, thereby violating 309 CMR 4.03(11).

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LSP Board Complaint No. 99C-11 and 00C-14

LICENSE REVOCATION

On May 25, 2010, after an adjudicatory hearing, the Board issued a final order revoking the LSP's license and prohibiting the LSP from reapplying for a license for five years minus the 128 days when the LSP's license had been immediately suspended by the Board pursuant to 309 CMR 7.09. The revocation began on June 24, 2010. The LSP has appealed the Board's final order to Superior Court and that appeal is pending.

This disciplinary action resulted from two complaints, one filed by the Department of Environmental Protection ("DEP") and the other by a private party. On October 9, 2003, the Board voted to commence formal disciplinary proceedings against the LSP. In the Order to Show Cause served on the LSP, the Board described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds to discipline the LSP.

The LSP appealed the Board's initial decision. The adjudicatory hearing was conducted by an Administrative Magistrate at the Division of Administrative Law Appeals (DALA) and focused on the LSP's work at seven sites. The Magistrate's recommended decision concluded that the Board had not proven that sufficient facts existed to discipline the LSP.

After reviewing the administrative magistrate's recommended decision and the record of the adjudicatory proceeding, the Board issued final findings of fact and rulings of law in October 2009 that concluded that sufficient facts did exist to discipline the LSP in regard to the LSP's work at the seven sites. The Board also concluded that the LSP had violated several of the Board's Rules of Professional Conduct including:

> 309 CMR 4.02(1) which requires an LSP to act with reasonable care and diligence, and apply the knowledge and skill ordinarily exercised by LSPs in good standing at the time the services are performed;

309 CMR 4.03(3)(b) which requires LSPs to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and the regulations in the Massachusetts Contingency Plan; and
309 CMR 4.03(3)(d) which requires LSPs to disclose and explain in waste site cleanup activity opinions the material facts, data, other information, and qualifications and limitations known by him or her which may tend to support or lead to a waste site cleanup activity opinion contrary to, or significantly different from, the one expressed.

Summary of Factual Findings

In its final findings of facts and rulings of law, the Board made the following determinations regarding the LSP's work at the seven sites. In the case of three of the seven sites, the LSP submitted Downgradient Property Status (DPS) opinions and, in the case of the other four sites, the LSP submitted Response Action Outcome (RAO) opinions.

Each of the Downgradient Property Status opinions asserted that the sole source of the contaminants was on a different property and had migrated to his/her client's property, and, therefore, the LSP's client was not responsible for remediation of the contamination. The Board concluded that each of these opinions omitted documented histories of industrial site uses and potential on-site sources of the same contaminants, and that the LSP had not conducted sufficient investigation to support his/her opinions:

- The LSP's DPS opinion for Site A did not disclose that a fuel depot and gasoline station had operated on the site for over 30 years or that two earlier site assessments concluded that the former oil and gasoline tanks on the property were likely one of the sources of the on-site petroleum contamination. The LSP's site assessment consisted of only one groundwater sample from a single monitoring well, and the opinion did not disclose that the monitoring well was in the vicinity of the former on-site gasoline tanks that two prior consultants had identified as a likely source of the contamination.

- The LSP's DPS opinion for Site B did not mention that the monitoring well in which petroleum was found floating on top of the groundwater was in the same location as the two former on-site gasoline tanks. It did not mention that gasoline had been found in the surrounding soil when those tanks were excavated. The LSP sampled only one monitoring well and did not measure groundwater elevations to determine the groundwater flow direction. The LSP provided no data or technical information to support his/her assertion that the petroleum contamination found on Site B was fresh and had migrated onto the site via groundwater.

- The LSP's DPS opinion for Site C did not mention that since 1919 the property had been used for light industrial activities that commonly used chlorinated solvents, and that a former consultant had concluded sources

of solvents existed on the property. The LSP's opinion also did not mention that three of the solvents appeared only in the central and downgradient area of the site, and s/he presented no data or technical information to support his/her theory that a sump pump caused the chlorinated solvents to migrate from the upgradient property to the center of the site. The DPS was terminated at MassDEP's request.

The Board concluded, in the case of the four RAO opinions at issue, that the LSP erred in submitting these opinions because oil or hazardous materials remained on those sites at concentrations that could pose significant risks to health or the environment:

- The LSP submitted an RAO opinion for a gasoline release at Site D without recognizing that sampling results showed that a second reportable release of fuel oil was present and that the concentrations could pose a significant risk. S/he did not document the extent of contamination adequately or evaluate either the history or current occupancy of the site. The LSP did not evaluate the pathways by which the contaminants might migrate, the points at which people might come into contact with contaminants, or the concentrations they might encounter, all of which are fundamental and required information concerning the risks the site may pose to people or the environment. MassDEP issued a Notice of Noncompliance informing the property owner that this opinion did not comply with the MCP.

- Site E was contaminated with petroleum. Even though the LSP had been informed the site was located in a Zone II drinking water protection area, s/he nevertheless relied on two visibly imprecise maps to assert that the contaminated part of Site E was not within the Zone II protection area. S/he did not review the available map of the DEP-approved Zone II delineation. The LSP applied less-stringent cleanup standards that were inappropriate for drinking water protection areas. MassDEP issued a Notice of Noncompliance in April 1996 informing the property owner that this opinion did not comply with the MCP.

- Only two years later, in 1998, the LSP filed an opinion terminating response actions at another site (Site F) in a Zone II drinking water protection area, even though carcinogenic chlorinated solvents remained in the site's groundwater at concentrations hundreds of times higher than drinking water standards. The LSP acknowledged the site was in a Zone II, and s/he knew that an LSP opinion cannot be used to modify the boundaries of a DEP-approved Zone II drinking water protection area. Nevertheless, his/her opinion asserted that the Zone II boundary was incorrect and did not include the Site D property. The LSP again applied less stringent cleanup standards than those required to protect public drinking water sources. MassDEP issued a Notice of Noncompliance to

the property owner, and issued a second Notice of Noncompliance directly to the LSP for failing to comply with the MCP.

- In 2001, the LSP submitted an RAO opinion for Site G although carcinogenic vinyl chloride was more than 35 times higher than the cleanup standard. Although prior consultants had identified on-site sources of contamination, the LSP focused on one corner of the site and ignored pre-existing contamination on the remainder. The LSP asserted that contamination on the rest of the site had migrated from the abutting upgradient property, but did not file a DPS submittal, thus creating a situation that abandoned the contaminants on the majority of the property. MassDEP issued a Notice of Noncompliance informing the property owner that this opinion did not comply with the MCP.

The following matrix depicts in visual form the LSP's pattern and practice of issuing Opinions based on too little site information.

	Site A	Site B	Site C	Site D	Site E	Site F	Site G
Did Not Disclose Known Sources of Contamination on Site, 40.0183(2)*	✓	✓	✓	✓			✓
Did Not Present Groundwater Data to Show Contamination Migrating Onto Site to Validate Opinion, 40.0183(4)(d)	✓	✓	✓				✓
Improperly Relied on Employee's Erroneous Statements or Omissions Critical to Opinion	✓			✓	✓		
Grossly Insufficient Soil or Groundwater Sampling, 40.0183(4)(d), 40.1004(1)		✓	✓	✓		✓	✓
Did Not Determine Extent of Contamination and/or Omitted Required Elements of Risk Characterization 40.904(2)				✓		✓	✓
Filed Opinion To End Client's Responsibility Although Contaminants Continued to Pose Substantial Risk (Did Not Meet Applicable Standards for Cleanup or Downgradient Ppty Status)	✓	✓	✓	✓	✓	✓	✓
Left Contaminant Concentrations Above Drinking-Water Standards on Site in Drinking Water Source Area, posing public health risk 40.0932(4)					✓	✓	

* All citations are to the version of the Massachusetts Contingency Plan, 310 CMR 40.0000 in effect at the time the LSP rendered each opinion.

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LSP Board Complaint Nos. 99C-13, 02C-06, and 02C-10

VOLUNTARY SURRENDER OF LICENSE

On July 17, 2006, pursuant to an Administrative Consent Order ("ACO"), the LSP voluntarily surrendered his/her LSP license. After initially requesting an adjudicatory hearing to contest the Board's findings in regard to complaint 99C-13, the LSP entered into an ACO to resolve the disciplinary charges pending against him/her related to that case and to resolve two other pending complaints (02C-06 and 02C-10) that were being investigated by the Board. The LSP did not admit to any violation of law or regulation but agreed to voluntarily surrender his/her license and never to reapply. Disciplinary action 99C-13 resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Complaint 02C-06 was also filed by DEP alleging a pattern of poor performance by the LSP when s/he provided professional services and wrote LSP opinions regarding several hazardous waste sites. Complaint 02C-10 was filed by a private party and alleged problems with a Response Action Outcome statement filed by the LSP in 2000 regarding a gasoline release. Because complaints 02C-06 and 02C-10 were under investigation when the ACO was signed, the Board made no findings in regard to them.

Summary of Findings Regarding Case 99C-13

Based on its initial investigation, the Board determined that the LSP violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, by signing off on a Response Action Outcome statement ("RAO") that failed to assess adequately the nature and extent of contamination at the Site and failed to characterize adequately the risks posed by contamination at the Site;
- 309 CMR 4.02(3), which states an LSP may rely in part upon the advice of qualified professionals, for relying completely upon the technical assistance of one or more professionals in regard to the RAO, without questioned whether these professionals' opinions were based upon insufficient data;
- 309 CMR 4.03(5)(a) (currently 4.03(3)(a)), which requires an LSP to exercise independent professional judgment, by failing to question the opinions of other members of the project team and to require that those opinions be supported by sufficient data from the Site;
- 309 CMR 4.03(5)(b) (currently 4.03(3)(b)), which requires that an LSP follow the requirements and procedures set forth in the MCP. For

example, the LSP violated 310 CMR 40.0904, 310 CMR 40.0996(5) and 310 CMR 40.0992;

- 309 CMR 4.03 (5)(c) (currently 309 CMR 4.03(3)(c)), which requires an LSP to make a good faith and reasonable effort to identify and obtain relevant and material data evidencing site conditions, by failing to collect sufficient soil and groundwater data to conclude that 'no significant risk' existed at a Site; and
- 309 CMR 4.03(5)(d) (currently 309 CMR 4.03(3)(d)), which requires that an LSP disclose and explain, in a waste site cleanup activity opinion, material data that might have tended to support an opinion significantly different from the one expressed, by failing to disclose in the RAO the existence of groundwater data indicating high concentrations of petroleum contaminants in two monitoring wells. The LSP should have disclosed the existence of these data along with any technical justification for not relying on them.

Background of Case 99C-13

The property at issue had been used as an auto repair and gasoline service station from 1945 to 1997 ("the Property"). Between 1987 and 1991, a series of environmental assessments were carried out at a commercial property located across the street and hydraulically downgradient of the Property ("Property A").

The assessments carried out at Property A showed high levels of gasoline constituents in groundwater. It was determined that the Property was the likely source. On July 29, 1991, the Massachusetts Department of Environmental Protection ("DEP") issued a Notice of Responsibility to the owner of the Property stating that the Property was the source of contamination at Property A. In September 1992, gasoline in the form of light non-aqueous phase liquid ("LNAPL") was observed in monitoring wells at the Property. The highest LNAPL thickness detected in a monitoring well at that time was 13 inches.

In 1991, the entity that owned Property A sued the owner of the Property. A court judgment entered in August 1994 held that the Property was the source of contamination at Property A and that the contamination had impeded its sale. As part of a settlement agreement, the owner of the Property conveyed the Property to the owner of Property A.

In November of 1996, the owner of Property A (who, by that time, also owned the Property) retained a consulting company to advise as to the feasibility of preparing a Response Action Outcome statement ("RAO") for Property A. The consulting company, in turn, hired the LSP in connection with preparation of an RAO for Property A. The Respondent signed off on a Class B-1 RAO for Property A that was submitted to DEP in January 1997.

After acquiring the Property in November 1996, the owner hired the same consulting company it has used at Property A to assess the Property. In 1997, a comprehensive site assessment was carried out at the Property. Sampling conducted in October and November of 1997 continued to show the presence of LNAPL. The greatest thickness of

LNAPL detected in a monitoring well at the Property was 14.4 inches in October 1997. Historically, LNAPL had been measured in seven monitoring wells at the Property and three monitoring wells at Property A.

The consulting company contracted with the LSP to assist with the preparation and filing of an RAO. The consulting company also contracted with several other individuals to perform work related to the RAO including a hydrogeologist who prepared a groundwater model and a risk assessor who worked on a risk assessment. On March 6, 1998, a Class A-3 RAO and a Notice of an Activity and Use Limitation ("AUL") were filed for the Property. The MCP defines a disposal site as any place or area, excusing ambient air or surface water, where uncontrolled oil and/or hazardous material has come to be located as the result of a release. 310 CMR 40.0006. The disposal site ("the Site") resulting from the petroleum release at the Property is defined in the RAO to include parts of the Property as well as a number of other downgradient properties including Property A. The LSP signed both the RAO and AUL as the LSP-of-Record.

The RAO stated that a condition of 'no significant risk' of harm to human health, safety, public welfare and the environment existed then and for the foreseeable future at the Site subject to the implementation of the AUL, and that a permanent solution requiring no further remedial actions or environmental monitoring had been achieved. The AUL was placed upon the entire Property. Activities and uses listed as inconsistent with the AUL opinion included residential and commercial occupancy at any depth greater than 10 feet below ground surface ("bgs") and any activities that result in direct contact with the soil at any depth greater than 10 feet bgs. Obligations and conditions of the AUL included no permanent breach of the naturally occurring clay layer at the Property.

On August 16, 2000, DEP issued a Notice of Audit Findings/ Notice of Noncompliance ("NOAF/NON") for the RAO and AUL. The NOAF/NON stated that the RAO included numerous MCP violations, including that assessment activities were insufficient to support a Method 3 Risk Characterization, and that the RAO failed to demonstrate that LNAPL at the Site had been adequately controlled and/or eliminated. DEP ordered that the RAO be retracted, the AUL be terminated and a Tier Classification be filed for the Site.

Instead of collecting groundwater samples downgradient from the area where contamination had been identified during the subsurface investigation, a contaminant fate and transport model was used to describe the limits of the plume. The Board determined that insufficient data had been collected to validate the accuracy of the contaminant fate and transport model in predicting the horizontal limits of the plume. The RAO stated that it was not practically feasible to drill monitoring wells either in the roadway or on private property downgradient. No explanation was provided as to why it was not practically feasible to drill such wells.

The RAO concluded that LNAPL which was present in groundwater at the Site was below the Upper Concentration Limit ("UCL") standard based on temporal and spatial averaging. The RAO stated that LNAPL thickness varied seasonably such that LNAPL

was statistically thickest in September and October when groundwater levels were statistically lowest and disappeared from the Site eight (8) months of the year during high water table periods. The RAO stated that LNAPL thickness averaged out to 0.4 inches per year and, therefore, the amount of LNAPL at the Site was less than the UCL of 0.5 inches. The statistical LNAPL analysis was based upon data from only three wells at the Site. In addition, the majority of the data used in the statistical analysis were collected during a one-month period in the fall. Estimates of the seasonal groundwater elevation used in the LNAPL analysis were based upon regional groundwater data rather than data from the Site. The regional groundwater data represented an average of 30-year data from three wells located in three different towns located at some distance from each other. The Board determined that the statistical LNAPL analysis in the RAO was unacceptable because it was based on very limited data.

The RAO concluded that a naturally occurring low permeability silty sand and clay was continuous over the entire Site. The RAO concluded that this layer would prevent or retard the downward migration of product to underlying strata and would prevent or retard vapors from potentially migrating upward and infiltrating the basements of downgradient structures. The assumption that this layer was continuous over the entire Site was based upon a limited number of borings installed at the Property and Property A and at two downgradient locations. The Board determined that the conclusion that a silt/clay layer was continuous over the entire Site was based upon insufficient data.

The RAO stated that only Category GW-3 applied to any point within the boundary of the Site. This determination was based upon limited data collected at the Property and at Property A. No data was collected from any other downgradient properties within the Site boundaries. The Board determined that, given the dense population of the area surrounding the Property, a high probability existed that GW-2 applied to at least some portions of the Site. The Board determined that the insufficient data was used to conclude that only GW-3 applied to the entire Site.

The RAO stated that an indoor air sample was collected from a nearby public school located downgradient and within 500 feet of the Site. The RAO stated that hydrocarbons detected in the indoor air sample (pentane, 2-methyl pentane, and 4-methyl heptane) are common constituents of gasoline, but the RAO concluded that the Site was not a likely source. The RAO stated that the concentrations that were detected were orders of magnitude higher than could reasonably be expected from the migration of either LNAPL or dissolved phase gasoline contaminants over a distance of 1750 ft. from the source and the subsequent infiltration of the school building, and that the concentrations were more likely to be air contaminants associated with school-related sources because the Summa canister was located in a room containing an indoor air circulation unit. No additional air investigation was carried out at the school after collection of the initial indoor air sample. In addition, no groundwater data were collected between the Property and the school to validate the conclusion in the RAO that the Property was not a source of the hydrocarbon contaminants detected in the school building. The Board determined that additional air sampling data should have been collected from the school, and that groundwater data should have been collected between the Property and the school to confirm that the

Property was not a source of the hydrocarbon contaminants detected inside the school building.

Analytical results of groundwater samples collected from two monitoring wells on Property A in December 1997 were not included in the RAO. The data from one of these wells showed the presence of separate phase product. Data from both wells showed high concentrations of dissolved product. The data from these two wells were not used in the calculation of LNAPL thickness at the Site and were not otherwise used in the RAO's risk characterization. The fact that the data from these two wells were available but not used was not disclosed in the RAO. The LSP stated that the data were not included in the RAO because s/he believed the wells had been compromised by parking lot run-off. The Board determined that the existence of these data should have been made clear in the RAO along with the technical justification why the data were not used.

The LSP acknowledged that s/he did not prepare the scope of work to be carried out at the Site. The LSP also acknowledged that s/he was not involved in client meetings or in writing the proposals related to the Site. The LSP stated that the consulting company made the day-to-day decisions related to the Site. The LSP stated that s/he did routinely meet with people from the consulting company and other members of the project team regarding work at the Site and did visit the Site from time to time. The LSP stated that s/he relied upon the opinions of the other members of the team that worked on the RAO. For example, the LSP stated that s/he relied upon the opinions of the team member who used the statistical averaging approach regarding the presence of LNAPL on the Site, the hydrogeologist who prepared the plume model, and the risk assessor who signed off on the RAO.

The Board determined that, considering the nature and complexity of the Site, the LSP did not exercise adequate oversight in regard to the RAO. The Board determined that the LSP should have discerned, for example, that additional data were needed to support the models and/or conclusions presented by the various members of the team who worked on the RAO. The Board determined that the RAO failed to assess adequately the nature and extent of contamination at the Site and failed to characterize adequately the risks posed by that contamination. The Board determined that the overriding problem with the RAO was that insufficient data were collected and/or presented in the RAO report to validate the premise upon which the conclusion of 'no significant risk' was based.

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LSP Board Complaint No. 99C-09

LICENSE SUSPENSION

On February 25, 2003, as a result of an Administrative Consent Order ("ACO"), the Board suspended an LSP's license for violations of the Board's Rules of Professional Conduct. Under the terms of the ACO, the LSP's license will be suspended for four and one-half months provided the LSP successfully completes certain course requirements. If the LSP fails to comply with the terms of the ACO, the LSP's license will be suspended

for a total of six months. After initially requesting an adjudicatory hearing to contest the Board's findings, the LSP entered into an ACO in which s/he did not admit to any wrongdoing but agreed not to contest the Board's findings and accepted a license suspension. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Summary of Findings

In its initial investigation, the Board focused on four sites at which the LSP had provided LSP services. Based on the preliminary investigation, the Board determined that the LSP had violated the following Board Rules of Professional Conduct:

- 309 CMR 4.02(1) by failing to act with reasonable care and diligence in regard to the four sites outlined above. Examples of conduct by the LSP that violated this regulation included, without limitation, the following:

(a) In the case of Site A, the LSP:
  - appears to have been involved in conducting unauthorized RAM activities;
  - submitted an RAO where a condition of 'no significant risk' had not been achieved.

(b) In the case of Site B, the LSP:
  - submitted deficient Phase II, Phase III, Phase IV and Class C RAO reports;
  - proposed the use of monitored natural attenuation ("MNA") even though one of the contaminants present at the site is not considered susceptible to natural attenuation and even though MNA was not appropriate because of the potential that contamination from the site could impact nearby private wells.

(c) In the case of Site C, the LSP:
  - failed to reclassify the site as Tier I after the site was determined to be in DEP-approved Zone II;
  - submitted a deficient Phase II report.

(d) In the case of Site D, the LSP:
  - submitted an RAO where a condition of 'no significant risk' had not been achieved.

- 309 CMR 4.03(3)(b) by failing to follow the requirements and procedures set forth in applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

- 309 CMR 4.03(3)(c) by, among other things:
  - in the case of the RAO for Site A, failing to collect groundwater data, especially considering TPH had

been detected previously at concentrations above applicable standards;
- in the case of reports for both Sites A, B and C, failing to collect sufficient soil and groundwater data to delineate the extent of contamination.

- 309 CMR 4.03(3)(d) by, among other things: in the case of the Phase II Report for Site C, failing to state that 2-Methylnapthalene had been previously detected in soil at concentrations above the applicable reportable concentration.

Background of Case

The facts regarding the four sites focused on by the Board in its initial investigation are summarized below.

Facts Related to Site A

The property located at Site A had been used as a gasoline service station since approximately the 1930s. In January 1988, a release of gasoline occurred when a product distribution line was punctured on the property. The release was reported to DEP and assigned a Release Tracking Number ("RTN").

On or about September 2, 1997, an environmental consultant was engaged by the property owner to provide environmental services related to Site A as well as a number of other properties. The environmental consultant, in turn, engaged the LSP to provide LSP services in regard to Site A and various other properties owned by the site owner.

On September 10, 1997, DEP received a Release Abatement Measure ("RAM") Plan for Site A prepared by the environmental consultant. The transmittal forms that accompanied the RAM Plan were signed and stamped by the LSP. The RAM Plan was prepared for the management of previously identified contaminated soil expected to be encountered during the removal of surface soil to re-pipe underground storage tanks ("USTs") at the property. The RAM Plan did not propose excavation of any of the USTs or include provisions for dewatering the excavation.

On April 3, 1998, DEP was notified that a release of diesel fuel had been discovered at the site during the removal of USTs. According to a DEP release log form, elevated headspace readings were detected in soil samples collected from the UST grave. In addition, product was observed on the groundwater in the excavation. DEP assigned a Release Tracking Number ("RTN") for this release and approved the excavation of up to 150 cubic yards ("cy") of soil and the deployment of absorbent booms on the groundwater in the excavation as an Immediate Response Action ("IRA").

Prior to the excavation of the USTs from Site A, no modification of the RAM Plan was ever filed with DEP to indicate that excavation of the USTs was planned. After removal of the on-site USTs and discovery of the release, on April 14, 1998, DEP received a RAM Plan addendum prepared by the environmental consultant indicating a change in the scope of work to include removal of the USTs and removal and disposal of contaminated groundwater from the UST excavation. Also on April 14, 1998, DEP received a RAM status report prepared by the consultant that stated "petroleum impacted soil had been encountered in the excavation and was assumed to be diesel." The transmittal forms that accompanied both the RAM Plan addendum and the RAM status report were signed and stamped by the LSP.

Between April 11 and April 17, 1998, the UST excavation was dewatered. Dewatering resulted in removal of 38,723 gallons of petroleum-impacted groundwater. On April 14, 1998, a groundwater sample was collected from the excavation; analytical results of the sample indicated concentrations of Total Petroleum Hydrocarbons ("TPH") above applicable Method 1 standards.

On July 21, 1998, DEP received two documents regarding Site A: 1) a RAM Plan Completion Report; and 2) a second document containing an IRA Plan, IRA Completion Report, and a Class B-1 RAO regarding the April 3, 1998 release. The environmental consultant prepared both of these documents; the LSP signed and stamped the accompanying transmittal forms.

The RAO Statement said remedial actions had not been conducted at the site because a level of 'no significant risk' existed at the site. The RAO did not indicate that any additional groundwater data was collected after the April 14th sampling to confirm that TPH and other contaminants were not present at concentrations above applicable standards. Also, a site plan was not included in the RAO Statement.

On July 18, 1998 (after submission of the RAO statement to DEP), groundwater samples were collected from existing monitoring wells at Site A. The laboratory results, dated August 24, 1998, indicated that certain contaminants were present at concentrations above applicable standards. On August 19, 1998, DEP notified the site owner that the RAO would be audited. On September 23, 1998, DEP received a letter from the environmental consultant stating that, in light of the new groundwater sampling results, the RAO statement was being retracted.

On October 23, 1998, DEP issued a Notice of Audit Findings ("NOAF") regarding the site. Among the violations listed in the NOAF were that a condition of 'no significant risk' had not been achieved, and that the boundaries of the disposal site had not been delineated.

Facts Related to Site B

Property at Site B had been used as a gasoline station from 1963 to 1986 and as an automotive facility from 1986 to 1992. As of 1993, the property was being used as a sandwich shop.

A release was first reported at the property on November 4, 1986 after excavation and removal of five 4,000-gallon gasoline USTs. Elevated headspace readings were detected in soil above the water table. In April 1987, a 500-gallon fuel oil UST was removed and replaced by an above-ground fuel oil storage tank. In September 1987, an estimated 300 cubic yards of petroleum-impacted soil was removed from the gasoline UST excavation. On March 30, 1989, DEP issued a Release Tracking Number. In February 1990, a 500-gallon waste oil UST was removed.

Eight residential homes and one commercial property, all with private drinking water wells, were located east of the site. Two of the private wells were located within 500 feet of the site. A wetland area approximately ten feet lower in elevation than Site A was located to the east and southeast. A stream that originated in the wetland discharged to a municipal well field located approximately 0.42 miles northeast.

On June 5, 1998, a Phase II Scope of Work ("SOW") and a Phase II Comprehensive Site Assessment Report ("Phase II Report") were simultaneously submitted to DEP. Both the SOW and Phase II CSA were signed and stamped by the LSP. The SOW had not been submitted to DEP prior to the initiation of Phase II Comprehensive Site Activities ("CSA") at Site B.

The Phase II Report did not delineate the vertical and horizontal extent of groundwater contamination at the site. Even though certain petroleum contaminants were detected above applicable groundwater standards in samples taken from all four groundwater monitoring wells sampled during the Phase II CSA, no additional groundwater samples were collected downgradient of these wells to define the extent of groundwater contamination at the site. The Phase II Report stated: "The extent of groundwater impacted by VPH and MTBE was not fully defined for this investigation…Additional groundwater information collected over the next year will be evaluated in the Phase III report, to be submitted in 1999."

The Phase II Report also failed to adequately define the extent of soil contamination at the site. No soil samples were collected from the former UST area at the site during the Phase II CSA. In addition, the Phase II Report did not discuss whether further evaluation of the UST excavation area had been conducted when the USTs were removed, nor did the Phase II Report include the results of any analyses that may have been performed on the soils removed from the excavation.

The Phase II also failed to present data that ruled out the former fuel oil UST or the former waste oil UST excavations as potential source areas. The Phase II Report did not indicate what, if any, assessment was conducted in either of these areas.

The Phase II Report did not adequately evaluate the fate and transport of contaminants, existing and potential migration pathways, or potential human and environmental receptors. No information regarding aquifer configuration or groundwater velocity was provided and no groundwater elevation contour maps were included. Even though a stream in the wetland adjacent to the site discharged to a municipal well field, no downstream water samples were collected from the stream during the Phase II CSA to evaluate the potential migration of contaminants. The Phase II Report also did not discuss the presence of underground utilities that might act as migration pathways for groundwater or vapors.

The Phase II Report also failed to adequately characterize risk at the site. For instance, potential risks to humans posed by the wetlands and surface water were not characterized using a Method 3 risk characterization as required by the MCP. Concentrations of VPH and target analytes detected in surface water were compared to Method 1 standards that only apply to soil and groundwater. An ecological risk assessment was not conducted regarding the wetlands or surface water. Also, no laboratory analysis was conducted on soil from the soil boring that had exhibited the highest volatile concentration by headspace screening. As a result, potential risk posed by contact with these soils was not adequately characterized.

On July 31, 2000, DEP received a Phase III Remedial Action Plan ("Phase III Report") for Site B signed by the LSP. The Phase III Report, like the earlier Phase II Report, failed to delineate the extent of contamination at the site. The only additional sampling location added between the Phase II and Phase III Reports was the placement of a piezometer in the wetland in April 2000. The Phase III Report included analytical data from groundwater samples collected from the piezometer in May and June 2000. Analytical results on both samples indicated concentrations of C5-C8 aliphatics above applicable Method 1 standards. Despite this result, no additional samples were collected downgradient of this location to define the extent of contamination. In addition, the Phase III Report included analytical results on groundwater samples collected from the same four groundwater monitoring wells sampled for the Phase II. The Phase III Report indicated that samples were collected from these wells on several occasions between the spring of 1998 and June 2000. Even though these results indicated the presence of methyl tert-butyl ether ("MTBE") at concentrations above applicable Method 1 GW-1 standards in all four wells and concentrations of other petroleum-related contaminants in two of the wells at concentrations above applicable Method 1 GW-1 standards, no samples were collected downgradient of these wells to define the extent of contamination at the site.

The Phase III Report stated that monitored natural attenuation ("MNA") would be selected for implementation at Site B. The report did not address whether MNA was an appropriate approach for the MTBE contamination detected at the site. According to EPA and ASTM guidance, MNA was not appropriate because of potential for the nearby private wells to be impacted by contamination from the site. The Respondent has acknowledged that MTBE is not on the list of compounds susceptible to natural attenuation.

The Phase III Report also did not provide sufficient evidence to support the use of MNA at Site B. For example, the Phase III Report did not include temporal isopleth maps or graphs demonstrating that the contaminant plume at the site was stable or shrinking. In addition, the Phase III Report provided no evidence such as plots of dissolved oxygen, carbon dioxide, redox potential or microbial counts to indicate that a biologically destructive process was occurring at the site. The Phase III Report also did not provide an estimate when GW-1 standards would be achieved at the site if MNA were implemented.

A Phase IV Remedy Implementation Plan ("Phase IV Report") signed by the LSP was received by DEP on September 28, 2000. The Phase IV Report, like the Phase III Report, stated that an MNA program would be employed without documenting how it would be effective.

Like the two prior reports, the Phase IV Report also failed to delineate the extent of contamination at the site. The only new analytical data in the Phase IV Report were results of a water sample collected from one of the two private wells located within 500 feet of the site. The sample was tested for VOCs; the analytical results did not detect the presence of any contaminants. Other than the sample from this well, no other soil or groundwater data were collected in the time between submission of the Phase III and Phase IV Reports. Even though the Phase II though Phase IV site investigations had not defined the extent of contamination at the site, the Phase IV Report, nevertheless, stated:

> Historical data indicates that the extent of VPH impacted groundwater at the site is limited to the immediate vicinity of the former dispenser island and downgradient of the former underground storage tank area and oil/water separator.

On October 24, 2000, DEP received a Class C Response Action Outcome Statement ("RAO Statement") for Site B signed by the LSP. The RAO Statement failed to meet MCP requirements for a Class C RAO because, among other things, the nature and extent of the release had not been adequately assessed and potential risks at the site had not been adequately characterized. Despite the inadequate assessment, the RAO Statement said that no uncontrolled sources or substantial hazards remained on site. The RAO Statement proposed semi-annual groundwater monitoring until such time as a Class A RAO was submitted.

DEP issued an NOAF regarding Site B on March 12, 2001. The NOAF cited numerous violations and required that the RAO be retracted.

The LSP stated that s/he signed the Phase II Report even though the report did not define the extent of contamination at the site because s/he believed that his/her client would pay for additional work to "catch up" the site in time for the Phase III Report. The Board did not accept the LSP's explanation because the LSP went on to sign the

Phase III and Phase IV Reports, and the Class C RAO even though additional site investigation had not been undertaken.

The LSP also raised the defense that his/her client was unwilling to spend the money needed to conduct adequate site assessment activities. The Board did not accept this defense because an LSP cannot blame a client for his/her decision to sign a deficient submittal.

Facts Related to Site C

Property located at Site C had been used as a gasoline service station since approximately 1970. The site was bounded to the east by a road, beyond which were residential condominiums.

On July 7, 1997, DEP received a Phase II Comprehensive Site Assessment Report ("Phase II Report") signed by the LSP for Site C. A revised Phase II Report that corrected typographical errors in the previous version was signed by the LSP and received by DEP on October 9, 1997.

The Phase II Report stated that the site had previously been classified as a Tier II disposal site. This classification was made by an LSP who had previously done work at the site. The Phase II Report stated that the site had been determined to be located within a Potentially Productive Sole Source Aquifer and a DEP-approved Zone II. Even though the site had been determined to be within a Zone II by the time the Phase II Report was submitted, the LSP did not reclassify the site as a Tier I disposal site as required by the MCP.

The Phase II Report stated that soil at the site was classified as S-1, S-2 and S-3 and groundwater was classified as GW-1, GW-2 and GW-3. The report also stated that groundwater flow direction was estimated to flow toward the south-southeast in the direction of the residential condominiums.

The extent of soil contamination was not adequately defined in the Phase II Report. The only soil data included in the report were data presented in a previous 1994 Phase I Report prepared by another environmental consultant. The Phase II Report stated: "ethylbenzene and xylenes were the only compounds detected in the soil samples collected in 1994." The Phase II omitted the fact that, in 1994, 2-methylnapthalene had been detected in soil from one location at concentrations exceeding the applicable reportable concentration. No new soil data was collected for the Phase II. Therefore, no assessment was undertaken to confirm that contaminants such as 2-methylnapthalene were not still present in soil above applicable levels.

The extent of groundwater contamination was also not adequately defined in the Phase II Report. Analytical results included in the report indicated that benzene had been detected at concentrations above applicable GW-1 standards in a groundwater sample taken from one monitoring well, and MTBE was detected at concentrations above

applicable GW-1 standards in a groundwater sample taken from another well. Even though contaminants had been detected at concentrations above applicable limits, no additional groundwater samples were collected at locations downgradient of these two wells.

The LSP stated that s/he believed that monitoring wells were not installed in downgradient locations on the neighboring condominium complex because the property owner would not allow access. The Board did not accept this defense because, at the very least, the access issue should have been noted in the Phase II Report and it was not.

Despite the fact that insufficient soil and groundwater data were presented to define the extent of contamination at the site, the Phase II Report stated that the soil and groundwater data in the report suggested "the vertical and horizontal extent of petroleum impacted media has been adequately characterized at the site." The report also did not adequately evaluate hydrogeological characteristics, or the environmental fate and transport of contaminants.

The LSP stated that the client for Site C was unwilling to fund adequate site assessment activities. The Board did not accept this defense because an LSP cannot blame a client for his/her decision to sign a deficient submittal.

On February 16, 1999, DEP issued an NOAF that cited numerous MCP violations regarding the Phase II Report. The NOAF required the submission of an audit follow-up plan that addressed correction of the cited violations.

Facts Related to Site D

Property located at Site D had been used as a gasoline station since 1938. In 1988, six USTs were removed from the property and replaced with four 10,000-gallon USTs. Response actions were initiated at the property in January 1990 following a complaint of gasoline odors in the basement of a building located on an abutting property.

On May 16, 1995, DEP received a Class A-2 RAO Report ("RAO Report") signed by the LSP regarding Site D. The RAO Report indicated that response actions at the site consisted of assessment only; therefore, a Class A RAO should not have been filed for the site. Pursuant to the MCP, Class A RAOs only apply to disposal sites where one or more remedial actions has been conducted.

The RAO was invalid because a condition of 'no significant risk' had not been achieved. Concentrations of lead in groundwater from three different monitoring wells exceeded applicable Method 1, GW-3 standards but the RAO stated that, because samples collected downgradient of these locations were below GW-3 standards, 'no significant risk' of harm to health public welfare or the environment existed. Pursuant to the MCP, the groundwater exposure point in a Method 1 Risk Characterization is the groundwater resource as measured at each wellhead. Section 310 CMR 40.0973(7) of the

MCP states, a condition of 'no significant risk' does not apply if any Exposure Point Concentration is above applicable Method 1 standards.

The RAO Statement classified groundwater at the site as GW-3 but, because the average depth to groundwater was less than fifteen feet and contamination was present within thirty feet of an occupied building on the abutting property, groundwater should have been classified as GW-2 and GW-3.

On September 15, 1995, DEP issued an NOAF for the site that stated the RAO was invalid because a level of 'no significant risk' had not been achieved.

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LSP Board Complaint No. 99C-08

PUBLIC CENSURE

On February 3, 2000, the Board issued a Public Censure to an LSP for violations of the Board's Rules of Professional Conduct. The complaint in this case was filed by DEP.

Background of Case

On January 6, 1996, oil was observed seeping through a fieldstone basement wall and accumulating on the concrete basement floor of a property, following delivery of #2 fuel oil to an underground storage tank ("UST"). The DEP was notified on this date, and it provided oral approval to the LSP to perform an Immediate Response Action ("IRA") consisting of (1) removal of the oil from the basement floor with absorbent pads, (2) removal of oil from the UST to a second existing oil tank in the basement of the residence, (3) removal of the UST, and (4) removal of the contaminated soil.

On February 6, 1996, the DEP received an IRA Plan Modification dated February 2, 1996. This Plan Modification proposed, in addition to the activities already approved, to monitor the groundwater to determine if additional response actions would be necessary if complete removal of all contaminated soil was not possible. This Plan also stated that contaminated soil would be removed during the UST removal. No contaminated soils were ever removed from the site in conjunction with the UST removal.

On January 27, 1997, the DEP received an IRA Status Report/Plan Modification from the Respondent. The Plan Modification was dated January 17, 1997, and stated that the UST was removed on January 25, 1996, and that oil was observed seeping from beneath the basement into the UST excavation and had likely migrated beneath the foundation. No discussion of soil removal or documentation of soil removal was included. This Plan also stated that nutrient injection would be conducted in the basement of the building and that collection of soil samples would be taken during the

installation of the nutrient injection points. In fact, the points were installed in the former UST area but not in the basement, and no soil samples were collected from the basement.

On December 28, 1997, the LSP filed a Class A-2 RAO utilizing a Method 1 Risk Characterization. The Method 1 GW-2 and GW-3 standards for TPH as of December 28, 1997, were 1,000 ppb and 20,000 ppb respectively; however, residual TPH levels as high as 32,000 and 54,000 ppb were found at the site.

Summary of Findings

In its investigation, the Board determined that the LSP failed to comply with the Board's Rules of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 4.03(3) (b)) in that s/he failed to follow the requirements and procedures set forth in applicable provisions of the MCP.

Specifically, (1) the LSP conducted an IRA without approval from DEP. The decision to change the locations of the injection points and not to collect soil samples from the basement were not approved by the DEP and are considered by DEP to constitute a significant modification of the plan; (2) s/he filed a Class A-2 RAO for a site where a level of No Significant Risk had not been achieved; (3) s/he failed to identify any exposure point concentrations and failed to identify the site as GW-3; and (4) s/he filed an RAO without identifying the boundaries of the disposal site.

The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause issued by the Board.

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LSP Board Complaint No. 99C-04

PUBLIC CENSURE

On February 6, 2001, the Board issued a Public Censure to an LSP for violations of the Board's Rules of Professional Conduct. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Background of Case

The LSP signed a Phase I Report dated April 17, 1996. The Phase I Report stated that groundwater contaminants detected in each of the monitoring wells at the site were below applicable Method 1 Cleanup Standards with the exception of trichloroethene ("TCE"). TCE was detected in one monitoring well at a concentration that exceeded the Method 1 GW-2 standard. The report also stated that another round of groundwater

sampling should be conducted in an effort to determine if the TCE may be due to an off-Site source.

Additional groundwater samples were collected by the LSP's firm on June 14, 1996. During that sampling, a sample was collected from the well where the TCE had previously been detected. But the analysis performed on the samples did not include analysis for TCE. No additional groundwater sampling was conducted at the site between April 1996 and April 1997 to verify whether TCE was present at levels below regulatory standards.

The LSP signed a Response Action Outcome Statement ("RAO") dated April 1997 which stated that a condition of no significant risk had been achieved at the site. The RAO stated:

> The previously detected groundwater compounds were not detected at the site during the July 1996 groundwater sampling round….All of these previously identified compounds, with the exception of trichloroethene, were reported [in the Phase I Report] to be below applicable Method 1 Cleanup Standards. Trichloroethene was not detected during the July 1996 sampling round.

The RAO also stated that "based on the results of several groundwater sampling rounds, the previously identified volatile organic compounds are [now] present below regulatory standards."

Because the groundwater had not been analyzed to determine if TCE was present at levels below regulatory standards prior to submission of the RAO Statement, DEP determined that the LSP did not have sufficient basis to file the RAO. DEP directed that the RAO be retracted and the site was classified as a Tier 1C site.

Summary of Findings

Based on its preliminary investigation, the Board determined that the LSP violated the Board's Rules of Professional Conduct in several respects. The Board found that the LSP failed to comply with the following Board rules:

- 309 CMR 4.02(1), which requires that an LSP act with reasonable care and diligence, by submitting an RAO for the site without sampling groundwater to confirm whether TCE was present below regulatory standards;

- 309 CMR 4.03(5) (currently 309 CMR 4.03(3)), which requires that an LSP make a good faith and reasonable effort to obtain the data necessary to discharge his/her professional obligations, by failing to follow-up on the recommendation in the Phase I Report that groundwater be resampled for the presence of TCE; and

- 309 CMR 4.03(5)(b) (currently 4.03(3)(b)) which requires that an LSP follow the requirements and procedures set forth in the MCP. For example, the LSP opined in the RAO that no significant risk existed at the Site but, before doing so, the LSP failed to confirm that no exposure point concentration at the Site was greater than the applicable Method 1 groundwater standard, thereby violating 310 CMR 40.0973(7). The LSP also violated 310 CMR 40.0022(2) by making the misleading statements in the RAO that TCE was not detected during the July 1996 sampling at the Site and that previously identified volatile organic compounds were currently present at levels below regulatory standards. The LSP also violated the Response Action Performance Standard of 310 CMR 40.0191(1) in submitting an RAO without having analyzed the groundwater to determine if TCE was present at levels below regulatory standards.

In the Order to Show Cause served on the LSP, the Board described the findings of the Board's preliminary investigation and concluded that these findings constituted sufficient grounds to sanction the LSP with a Public Censure. The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause.

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LSP Board Complaint No. 99C-03

FIVE YEAR LICENSE PROHIBITION

On January 25, 2000 the Board issued an Order For Five year License Prohibition, preventing the LSP from reapplying for a license from the Board for a five year period. The LSP's license had lapsed due to his/her failure to renew his/her license after its expiration. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Background of Case

In 1993, a limited site investigation was conducted for the operator of the site by an environmental firm other than the LSP's. Various businesses, including several dry cleaners, had occupied the site. The investigation included the advancement of three soil borings and the installation of two monitoring wells. Lead was detected at a concentration of 9420 ug/l in monitoring well #1. Upon resampling later in 1993, lead was found at less than 10 ug/l.

In 1995, a supplemental investigation was conducted by a consultant other than the subject LSP. Tetrachloroethene was detected at a concentration of 6 ug/l; vinyl chloride was detected at a concentration of 220 ug/l. The consultant concluded that the vinyl chloride was most likely a by-product of PCE and may have been released by the on-site septic system.

On July 22, 1998, the LSP submitted to DEP a one-paragraph letter describing certain sampling results, along with a map and an RAO Transmittal form which indicated that a Class A-1 RAO had been achieved at the site (the "RAO"). The LSP did not conduct any sampling at the site, but submitted the RAO based on work conducted by prior consultants. No remedial actions were undertaken at the site. Insufficient information was submitted with the RAO to demonstrate that the source of the vinyl chloride at the site had been either identified, adequately controlled, or eliminated.

The LSP also failed to identify in the RAO Statement that an elementary school abutted the property to the north and was a potential sensitive receptor. In addition, the RAO submittal package lacked basic supporting information. The submittal did not include boring logs for the two monitoring wells installed in 1993. While the site plan that was submitted indicated the locations of the five additional monitoring wells installed in 1995 and the RAO included chemical data sheets for samples collected in 1997, no boring logs or other information for these wells was given. No information regarding sampling procedures, analytical methods, or groundwater flow determinations was provided with the RAO.

Summary of Findings

The Board determined that the LSP failed to comply with the Board's Rules of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 4.03(3)(b)) in that s/he failed to follow the requirements and procedures set forth in applicable provisions of the MCP.

In addition, the LSP failed to comply with the Board's Rules of Professional Conduct at 309 CMR 4.02(1) in that s/he failed to act with reasonable care and diligence by doing the following: by failing to ensure that a level of No Significant Risk had been achieved at the site: by failing to determine the nature and extent of the release; by failing to document the source of contamination and that the source had been eliminated or controlled; and by failing to provide adequate supporting information in the RAO statement.

Disciplinary Considerations

The Board considered the following factors and determined that a form of discipline short of prohibiting the LSP from reapplying for a license for a five-year period would not be appropriate or adequately protective of public health, safety, welfare, and the environment. The factors included the nature, severity, extent, breadth, and number of the violations of the MCP; the fact that these violations did not occur during the first year of the redesigned 21E program; and the Board's conclusion that these violations indicate that the LSP was practicing at a level well below the general standard of care required of LSPs.

The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause issued by the Board.

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LSP Board Complaint Nos. 98C-01 and 98C-03

PUBLIC CENSURE

On May 24, 2000, as a result of an Administrative Consent Agreement ("ACO"), the Board publicly censured an LSP for signing and stamping a Class A-3 RAO despite the fact that the Upper Concentration Limit ("UCL") for TPH had been exceeded. The Board's action resulted from two complaints, one filed by the Department of Environmental Protection ("DEP") and one by the LSP's client. After initially requesting an adjudicatory hearing to contest these findings, the LSP entered into an ACO in which s/he agreed not to contest certain findings and accepted a Public Censure.

Facts

In the ACO, the LSP agreed not to contest the following facts.

In April 1994, the LSP's firm excavated and removed a total of 360 cubic yards of soil at a disposal site where a machining business was located. Various samples from the exterior of the building were taken during and after the excavation, as well as confirmatory samples, which showed that levels of TPH were below the Method 1, S-1 Soil Standards. Although no soil was excavated beneath the building, two borings were performed inside the building to sample the soil below. Samples were taken at various depths. The samples contained TPH in the following amounts: 9,1000 mg/kg, 19,100 mg/kg, and 9,200 mg/kg. The UCL for TPH is 10,000 mg/kg.

After conducting a Method 2 Risk Characterization, the LSP signed and filed a Class A-3 RAO in August 1994. The groundwater and soil classification of GW-2 and S-2 were indicated on the RAO form. An AUL was submitted with the RAO which prohibited the "excavation beneath the footprint in the manufacturing portion of the structure . . . ." DEP subsequently conducted an audit and found that the submission of this RAO was improper because the UCL for TPH had been exceeded, thereby violating Section 40.1036(4) of the 1994 MCP. As a result, DEP required the RAO be retracted.

Findings and Determinations

In the ACO, the LSP agreed not to contest the Board's conclusion that s/he had failed to comply with Board's Rules of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 4.03 (3) (b)) in that s/he failed to follow the requirements and procedures set forth in the applicable provisions of the MCP. The Board found, and the LSP also agreed not to contest, that a Public Censure was the appropriate discipline for this violation.

Additional Disputed Matters Resolved by Advisory Ruling

As a result of its investigation, the Board had agreed with DEP that the initiation of the excavation activities described above constituted an unlawful RAM, because no approval had been obtained from DEP for this work. The LSP contested this on the grounds that neither the LSP nor the LSP's firm had any knowledge that the 120-day reporting period had expired, and although they did not ask the client/PRP about this, they assumed when they initiated excavation and soil removal activities that they were conducting a proper LRA. Additionally, the LSP questioned whether s/he had any obligation under the Board's Rules of Professional Conduct to ask his/her client when the client first obtained notice of the release.

Rather than litigate this contested issue in an adjudicatory proceeding, the Board and the LSP agreed in the ACO that the LSP would submit an Advisory Ruling Request on this question and be bound by the Board's response. The Advisory Ruling Request was submitted to the Board as an attachment to the ACO. In it, the LSP asked the Board to clarify whether an LSP has an obligation to inquire of his or her client regarding the date on which the client first obtained knowledge of the release so that the LSP and the LSP's firm will know how many days, if any, are left in the 120-day LRA period to conduct LRA excavation activities before DEP approval needs to be obtained. On September 13, 2000, the Board issued this Advisory Ruling (No. 2000-01), which is available elsewhere on this Web site.

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LSP Complaint No. 97C-10

PUBLIC CENSURE

On September 9, 1998 the Board issued an Order and Public Censure requiring the LSP to submit, for one year from the date of the Order or for the next five RAO submittals filed, whichever comes first, a copy of any and all Response Action Outcome Statements (and all supporting reports) which the LSP signed and filed with the Department of Environmental Protection ("DEP"). This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Background of Case

In August 1990, the LSP began oversight of a gasoline release from an underground storage tank at a car dealership. As part of the cleanup effort, the property owner was to have sealed five floor drains to prevent continuing discharge of hazardous material into the environment. The LSP filed an RAO claiming that the drains were sealed when, in fact, two of the drains had not been sealed and were still discharging waste into the environment.

The Phase II Report, dated March 7, 1997, stated: "Floor drains in the maintenance areas are connected to an oil/water separator located along the north side of the building. The oil/water separator in turn discharges liquids to a leach field located near the northeast

corner of the building." In addition to noting that the floor drains in the building had been discharging to the leach field, the Report noted that subsurface soil contamination had been identified and that elevated levels of VOCs and TPH had been detected in the groundwater downgradient of the leach field.

On April 24, 1997, the LSP signed and filed a Class A-3 Response Action Outcome Statement, a copy of a Notice of Activity and Use Limitation, and the Phase II Report (including a Method 3 Risk Characterization). The AUL noted that the sole avenue of exposure is human exposure to soil at depths greater than 3 feet. No mention of the leach field system was made. On August 8, 1997, DEP conducted an audit inspection of the site. During this inspection, functional floor drains that should have been closed were observed in two areas of the repair shop (the vehicle wash bay and auto body shop).

Summary of Findings

As a result of its investigation, the Board determined that the LSP had failed to comply with the Board's Rules of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 4.03(3)(b)) in that s/he failed to follow the requirements and procedures set forth in the applicable provisions of the MCP. Specifically, the Board found that the LSP had filed a Class A RAO without demonstrating that all uncontrolled sources of oil and/or hazardous material discharged to the environment were eliminated or controlled , as required by 310 CMR 40.1003(5) and 310 CMR 40.1056. The Board also found that the LSP had failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.02(1) in that s/he failed to act with reasonable care and diligence by filing a Class A RAO without carefully reading the Phase II report which clearly identified continuing uncontrolled sources of oil and/or hazardous material discharging to the environment.

The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause issued by the Board.

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LSP Complaint No. 97C-09

PUBLIC CENSURE

On June 11, 1999, as a result of an Administrative Consent Order ("ACO"), the Board publicly censured an LSP. This action resulted from a complaint filed by DEP.

Background of Case

The Board's investigation included review of work the LSP had conducted at two separate sites.

Site Number One

The LSP conducted a response action as a result of a release of petroleum products. A small amount of free product was observed in the excavation. Approximately 155 tons of contaminated soil were removed. A groundwater sample was taken from water entering the excavation and analyzed according to EPA Test Method 8240. Benzene, ethylbenzene and xylenes were detected in the water. Analytical results showed that benzene was detected at 75 ppb. This was noted in both Appendix B and in Table 1 of the "Summary of Laboratory Results" to the IRA Plan. Table 1 correctly identified the Reportable Concentrations of Benzene for GW-1 as 5ppb.

The site was located in a GW-1 area as defined by 310 CMR 40.0932(4). Private wells at the post office and a nearby residence were located within 500 feet (approximately 150 feet) of the release, and this fact should have been identified by the LSP but was not. The IRA Plan submitted to the DEP in 1994 did not identify the site as a GW-1 area. The RAO statement submitted in 1994 identified the groundwater categories as GW-2 and GW-3. Monitoring wells were not installed as part of the IRA or RAO. The GW-1 standard for benzene is 5ppb.

The LSP clearly and admittedly mis-categorized groundwater at the site as GW-2. With a concentration of benzene over the reportable concentration of 5ppb for GW-1, the LSP submitted an RAO when there remained a condition of significant risk at the site.

The LSP stated that the error was due to a mistake in selecting the wrong groundwater category and then making a mistake in reading the chart for allowable concentrations and that the failure to conduct any further investigation stemmed from this initial error. While the Board had no reason to believe that the error was intentional, the LSP should have been adequately familiar with, and able to understand the reportable concentration charts in the MCP. The existence of a residence and the probability that there were private wells and other properties within 500 feet of the site was apparent.

Site Number Two

An additional investigation was conducted regarding the facts and circumstances leading to the issuance of a Notice of Noncompliance ("NON") by the DEP regarding another site for which the subject LSP was the LSP-of-Record. The NON asserted that in 1995, the LSP submitted a Class B-1 Response Action Outcome Statement based upon a Method I Risk Characterization, yet concentrations of dieldrin in the soil exceeded the Method I, S-1 standards. The filing of an RAO in this circumstance would be a violation of 310 CMR 40.0973(7). The LSP contended that "the detected concentration (.036 ppb) at location B-2 (which was just above the S-1 soil standard of .03 ppb) represented a ubiquitous environmental level as noted in ATSDR, 1992 ... and was not considered a health risk." After a review of the NON and the LSP's response, the Board concluded that the factual allegations relating to this matter in the NON were correct.

310 CMR 40.1020(2) states that "A level of No Significant Risk shall be deemed to exist or to have been achieved at all disposal sites where the concentrations of oil and hazardous material in the environment have been reduced to background levels". However,

the document cited in the LSP's response from ATSDR describes general information about soil monitoring from a national soils monitoring program that was conducted in 1976, and is not considered to be a reliable source of information about the presence or absence of specific pesticides in Massachusetts soils. Also, the LSP appears in his response to presume that the source of this pesticide was its routine application in accordance with the manufacturer's directions, as opposed to a spill or release. The LSP should have documented the basis for this presumption in the RAO.

Summary of Findings

Site Number One

As a result of its investigation, the Board determined that the LSP failed to comply with the Board's Rules of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 309 CMR 4.03(3)(b)) in that s/he failed to follow the requirements and procedures set forth in applicable provisions of the MCP. Specifically, the LSP failed to identify the site as GW-1 and therefore failed to undertake appropriate assessment and remediation actions as required by 310 CMR 40.0932(4), 310 CMR 40.0974(2), 310 CMR 40.0904(2), 310 CMR 40.0904(3), 310 CMR 40.0923, and 310 CMR 40.0925 [May 1995 ed.].

The Board also determined that the LSP failed to comply with the Board's Rule of Professional Conduct at 310 CMR 4.02(1) in that s/he failed to act with reasonable care and diligence by, among other things, failing to correctly classify groundwater at the site as GW-1.

Site Number Two

As a result of its investigation, the Board determined that the LSP failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03(5)(b) (now renumbered as 309 CMR 4.03(3)(b) in that s/he failed to follow the requirements and procedures set forth in applicable provisions of the MCP. Specifically, the LSP failed to comply with 310 CMR 40.0973(7), 310 CMR 40.0015(4)(a) and 310 CMR 40.0942(1) [May 1995 ed.].

The Board also determined that the LSP failed to comply with the Board's Rule of Professional Conduct 4.03(2)(1) in that s/he failed to act with reasonable care and diligence by, among other things, signing and stamping an RAO that claimed concentrations of detected contaminants met the Method 1, S-1 standards, even though supporting documentation indicated that one contaminant exceeded the applicable standard, and another contaminant detected had no Method 1 standard.

After initially requesting an adjudicatory hearing to contest these findings, the LSP entered into an Administrative Consent Order in which s/he agreed to accept a Public Censure.

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LSP Complaint No. 97C-08

PUBLIC CENSURE

On July 8, 1999 the Board issued an Order and Public Censure to an LSP for violations of the Board's Rules of Professional Conduct. The complaint in this case was filed by DEP.

Background of Case

On July 14, 1997, the LSP submitted a one-page document to the DEP entitled "IRA Status Update." As evidenced by a completed IRA Transmittal Form, which was not signed by the LSP until July 28, 1997, and not submitted to DEP until September 3, 1997, this "IRA Status Update" was submitted for the purposes of complying with the requirements of 310 CMR 40.0425(2). This regulation requires that IRA Status Reports be submitted to the DEP at six-month intervals after the filing of the initial written IRA Status Report. The "IRA Status Update" was severely inadequate as the intended IRA Status Report.

The LSP acknowledged that s/he had knowingly submitted an inadequate report. The LSP's stated reason for the inadequate submittal was lack of sufficient budget to complete an adequate report as required by the MCP. The Board's Order rejected this reason as wholly insufficient.

Summary of Findings

As a result of its investigation, the Board determined that the LSP had failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03 (5) (b) (now renumbered as 4.03(3)) in that s/he failed to follow the procedures and requirements as set forth in the applicable provisions of the MCP. Specifically, the Board found that the LSP intentionally submitted an IRA Status Report s/he knew to be inadequate with respect to the requirements of 310 CMR 40.0425(3). In addition, s/he failed to submit the appropriate transmittal form as required by 310 CMR 40.0425(3) and 40.0425(5). The Board also determined that the LSP had violated the Board's Rule of Professional Conduct at 309 CMR 4.02(1) in that s/he failed to act with reasonable care and diligence by submitting an inadequate IRA Status Report.

The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause issued by the Board.

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LSP Complaint No. 95C-03 and 97C-07

License Withdrawn

In August of 1999, the Board and the LSP entered into a Consent Agreement whereby the LSP agreed not to renew his/her license as an LSP and not to reapply for a license from the Board for the next five years. This agreement was reached after the LSP requested an administrative hearing to review the Orders to Show Cause issued by the Board in the two above referenced cases. This action resulted from complaints filed by DEP.

Complaint 95C-03

Background of Case

In March of 1994, the LSP rendered an LSP Opinion for a Class A-1 Response Action Outcome ("RAO") Statement for a disposal site located in a mixed commercial and residential urban area. The LSP's company had been retained in 1993 to address contamination identified during the removal of a 3000-gallon gasoline UST located adjacent to a building housing a number of small businesses, including an engine repair shop and an auto body shop. In this Opinion, the LSP opined that the response actions taken complied with the MCP.

In this RAO Statement, the groundwater at the site was classified as GW-2. A supplemental report submitted with the RAO stated that the groundwater had initially been classified as GW-1 due to its proximity to private wells but that it could be re-classified as GW-2 because the risk of human consumption had been reduced. This RAO Statement also asserted that the contamination at the site had been reduced to levels that would exist in the environment in the absence of the disposal site ("background").

DEP's audit staff found that, pursuant to the MCP, the groundwater at the site should have been categorized in the RAO Statement as GW-1, because the disposal site contained groundwater that was located within 500 feet of one or more private water supply wells at the time of notification and all the provisions of 310 CMR 40.0932(5)(d) (1995 ed.) had not been met. Groundwater categorized initially as GW-1 solely due to its location within 500 feet of a private water supply well could be categorized as GW-2 only if all the provisions of 310 CMR 40.0932(5)(d) had been met, including taking the private wells out of service, connecting those properties to the public water supply system that served the area, and implementing a Grant of Environmental Restriction. The auditors found that these requirements had not been met.

The RAO Statement stated that it relied on Method 1 to characterize risks at the site and identify appropriate cleanup standards. But the submission of a Class A-1 RAO Statement was inappropriate and violated the MCP in these circumstances, because groundwater data (submitted with the RAO) indicated that concentrations of benzene and ethelbenzene remaining in the groundwater at the site exceeded their corresponding Method 1/GW-1 standards. The submission of a Class A-1 RAO Statement was also inappropriate and violated the MCP because the RAO documentation failed to demonstrate that the contaminants at the disposal site had been reduced to background, as required by 310 CMR 1036(1)(a).

Summary of Findings

As a result of its investigation, the Board found that by March 7, 1994, the LSP knew or should have known of each of the provisions of the MCP identified above. As a result, the Board found that the LSP's conduct violated §§ 4.02(1) and 4.03(5)(b) of the Board's Rules of Professional Conduct (309 CMR 4.00). The Board considered these to be serious violations. In the absence of the response actions that would otherwise have been taken if all the provisions of 310 CMR 40.0932(5)(d) had been met, the Board concluded that this RAO Statement allowed a significant risk of harm to exist, i.e., that people could have ingested contaminated groundwater at some point in the future.

Nevertheless, because the Board believed that that the LSP's conduct stemmed from a lack of knowledge of the requirements of the MCP for reclassifying groundwater, and because the LSP did not knowingly submit a document that violated the MCP, the Board elected to treat as a mitigating factor the LSP's lack of knowledge of the MCP at this early stage in the redesigned program. This RAO Statement was submitted within the first six months of the redesigned 21E program. However, the Board found that the newness of the program should not excuse the LSP's conduct entirely. It was the Board's view that a Licensed Site Professional, acting with reasonable care and diligence at that time (about five months into the redesigned program), would not have reclassified groundwater from GW-1 to GW-2 without noticing Section 40.0932 of the MCP, the only section of the MCP dealing directly with the classification and reclassification of groundwater. In consideration of all of the factors described above, the Board issued an Order to Show Cause why the Board should not issue a public censure in this case.

Complaint 97C-07

Background of Case

On December 1, 1994, DEP gave oral approval for the removal of 100 cubic yards of contaminated soil from an underground storage tank excavation as an Immediate Response Action ("IRA"). Despite this limitation, during December of 1994, the LSP oversaw the excavation of over 540 cubic yards of contaminated soil from the area. In addition, the LSP installed a groundwater leaching galley designed to intercept the groundwater table at the site and vent vapors from the subsurface into the atmosphere. The leaching galley was not part of either the initial IRA nor any subsequent modification.

In June of 1995, the LSP conducted a Release Abatement Measure ("RAM") at the residential dwelling located next to the site. This RAM involved the excavation of 25 cubic yards of soil. Before backfilling the excavation, the LSP installed a similar leaching galley in the excavation. The leaching galley was not part of the RAM Plan filed by the LSP with DEP.

The leaching galleys installed by the LSP were vented to ambient air without consideration of possible risk and/or nuisance. These remedial actions involved the

emission of oil and/or hazardous material to the atmosphere. In neither instance did the LSP treat the emissions to the ambient air with a control device. Prior to the commencement of the remedial action, an LSP Opinion was not submitted to DEP stating that such untreated emissions would present no significant risk to health, safety, public welfare and the environment.

In January 1995, the LSP failed to adequately assess the indoor air at the residential dwelling next to the site, in violation of 310 CMR 40.0411 (1995 ed.). An HNU, a field screening instrument, was used to conduct the assessment. DEP Guidance entitled "Guidance For Disposal Site Risk Characterization," dated July 1995, ("Guidance") states that "... MADEP considers screening techniques not applicable to the estimation of exposure point concentrations or to the comparison of site concentrations to background" (Guidance at p. 2-21). The Guidance also states that "[w]hen available and appropriate, standard EPA methods should be employed" (Guidance at p. 7-60). Additionally, the Guidance states: "Since the duration of most indoor air sampling events ranges from a couple of hours to a day, and the results are often used to evaluate subchronic exposures and chronic exposures, sampling durations should be as long as possible" (Guidance at p. 7-60). Use of an HNU for indoor air quality assessment is not a standard EPA method and is not capable of collecting a proper time and weighted sample.

In January 1997, the LSP filed a Response Action Outcome Report ("RAO") that did not adequately characterize the nature and extent of the release at the site. The technical information provided did not adequately demonstrate that the concentrations of contaminants in groundwater posed "No Significant Risk." The issues raised by the filing of the RAO included failure to adequately assess the source area, failure to provide adequate site characterization, and failure to identify background.

Summary of Findings

As a result of its investigation, the Board determined that the LSP had failed to comply with the Board's Rule of Professional Conduct at 309 CMR 4.03 (5) (b) (now renumbered as 4.03(3)) in that s/he failed to follow the procedures and requirements as set forth in the applicable provisions of the MCP. The Board also determined that the LSP had violated the Board's Rule of Professional Conduct at 309 CMR 4.02(1) in that s/he failed to act with reasonable care and diligence. At the conclusion of its investigation, the Board issued an Order to Show Cause why the Board should not revoke the LSP's license for a period not less than five years.

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LSP Complaint No. 96C-06

LICENSE WITHDRAWN

In November of 1998, the Board and the LSP entered into a Consent Agreement whereby the LSP agreed to discontinue practicing as an LSP and not to reapply for a license from the Board in the future. This agreement was reached after the LSP requested an administrative hearing to review an Order to Show Cause issued by the Board. The Complaint was filed by a private property owner.

Background of Case

On October 18, 1994, DEP received a Class B-2 Response Action Outcome Statement ("RAO") signed by the LSP. The RAO was based upon a Method 1 Risk Characterization utilizing GW-1 standards and S-2/GW-1 standards and the implementation of an Activity and Use Limitation ("AUL"). The RAO concluded that a condition of "No Significant Risk" had been achieved at the site.

In the RAO, the LSP recommended the recording of a Notice of Activity and Use Limitation mandating the testing of the potable wells on the property on an annual basis in order to prevent a significant risk of harm to health, safety, public welfare or the environment from the oil and/or hazardous material in the groundwater. DEP acknowledged that a well testing requirement is an inappropriate site activity and use limitation that is not permitted by the AUL regulations.

The LSP's use of Method 1 to support an RAO was also inappropriate. On September 28, 1993, at the LSP's request, groundwater samples taken at the site from monitoring well MW-3 were analyzed by EPA Method 524.2. The results indicated that 1,3,5-trimethylbenzene was present at the site in a concentration of 118 ppb, and 1,2,4-trimethylbenzene was present at the site in a concentration of 385 ppb. The MCP does not contain, and DEP has not established, Method 1 Groundwater Standards for either 1,3,5-trimethylbenzene or 1,2,4-trimethylbenzene.

Furthermore, on September 28, 1993, at the LSP's request, groundwater samples were obtained from monitoring wells at the site and were analyzed for volatile organic compounds ("VOCs"). The results indicated that naphthalene was present in groundwater at the site at a concentration of 68 ppb. The Method 1 GW-1 Standard for naphthalene established by the MCP is 20 ppb. Also, TPH was detected at a concentration of 3,000 ppb in MW-3. The Method 1 GW-1 standard for TPH established by the MCP is 1,000 ppb. The LSP filed an RAO purportedly utilizing Method 1 Risk Characterization and S-2/GW-1 standards despite having these laboratory analyses, which detected naphthalene and TPH in amounts exceeding the Method 1 Standards. No groundwater contours were provided to show direction of groundwater flow.

During an investigatory conference with members of the Board's Complaint Review Team, the LSP stated that although s/he was aware of the requirements of the MCP, s/he did not comply with those requirements when compliance would require that his/her clients expend what s/he considers to be unreasonable additional time or resources.

Summary of Findings

As a result of its investigation, the Board issued an Order To Show Cause and a Proposed Order of Immediate License Suspension due to the nature and extent of the LSP's violations of the MCP. In issuing this Order To Show Cause, the Board found that an imminent threat to public health or safety or to the environment could result during the pendency of an adjudicatory hearing; therefore it invoked Section 7.07 of its regulations and immediately suspended the LSP's license pending a hearing on the Order To Show Cause.

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LSP Complaint No. 96C-03

REVOCATION OF LICENSE

In September 1997, the Board revoked an LSP's license for violations of the Board's Rules of Professional Conduct. The complaint in this case was filed by DEP. In taking final disciplinary action against this LSP, the Board (1) revoked the LSP's license; (2) barred the LSP from re-applying for licensure for a period of three years; and (3) required the LSP, prior to re-applying, to provide proof that s/he had successfully completed Board-approved courses on the Massachusetts Contingency Plan, site characterization, and field investigation methods.

Background of Case

In early January 1995, the LSP was hired to remediate an area of blue-grey soil measuring approximately 5' X 20' at a 7.6 acre parcel of land located at the Hingham Shipyard Industrial Center along the south bank of the Weymouth Back River (DEP file numbers 3-12098 and 3-2333). A previous site assessment report had identified chromium, lead, copper, zinc, oil and grease in the soil in that area, but the groundwater had not been assessed. The LSP failed to note that this was a previously-listed site and, therefore, did not learn that the site had been listed by DEP in 1990 as a Location To Be Investigated ("LTBI"). The LSP conducted a Limited Removal Action ("LRA"), excavating and stockpiling at least 40 cubic yards of soil, despite the fact that DEP's regulations prohibit an LRA from being conducted at an LTBI and limit LRAs (when permitted) to 20 cubic yards of soil contaminated by a hazardous material such as lead or chromium. On January 25, 1995, the LSP reported to DEP that there had been a previous release of lead at the site. The LSP also reported that an LRA had been initiated and that 40 cubic yards of soil had been excavated. DEP verbally approved the removal of the 40 cubic yards as a Release Abatement Measure "continuation" of an LRA. The LSP then exceeded this approval by removing a total of 60 cubic yards of excavated soil. Prior to submitting a Response Action outcome ("RAO") Statement to DEP five months later, the LSP failed to notify DEP that its 40-yard approval limit had been exceeded.

In June 1995, the LSP submitted to DEP a Class A-1 RAO Statement for the entire 7.6 acre parcel. The RAO Statement asserted that the contamination at the site had been reduced to background. The RAO Statement contained an LSP Opinion, signed by the LSP, attesting that, in the LSP's professional judgment, the response actions taken at the site complied with requirements of DEP's assessment and cleanup regulations. However, upon auditing the work done at the site, DEP found that important components of DEP's assessment and cleanup regulations had not been met. In addition, DEP found that important aspects of the LSP's work did not meet professional standards.

Within the 100-square-foot area of blue-grey stained soil that the LSP was retained to remediate, the LSP had not conducted an adequate assessment. In purporting to delineate the areal extent of the contamination, the LSP relied only upon his/her visual observations, calculations using pre-existing site data, and field analysis using an HNU meter. DEP complained, and the Board agreed, that this was insufficient to determine the vertical and horizontal extent of contamination. While the HNU meter may have been useful to screen for VOC's, it would not have indicated the presence of metals. Moreover, the LSP allowed samples to equilibrate for too long, did not provide documentation for the samples that the LSP states were sent to a lab, and asserted that the HNU meter is useful for quantitative purposes when, in fact, it is appropriately used only a screening tool.

In addition, in the limited area that was identified as contaminated, the methods used by the LSP to do confirmatory sampling were also deficient in several key respects. The LSP took only nine soil samples, which the Board found was too few to adequately confirm that the contamination had been remediated. Moreover, the LSP took these samples after clean backfill had been placed in the excavation and failed to take samples from the excavation's bottom. In addition, the LSP composited the nine samples into three composite samples by depth without providing any further explanation of how they were composited. The LSP also failed to specify the locations from which the nine samples were taken.

Furthermore, the LSP did not provide DEP (or the Board's investigators) with any documentation supporting the RAO's assertion that background levels had been achieved. Nor did the LSP provide any groundwater data to support the RAO, despite concerns about TPH and VOC contamination of the groundwater. During the Board's investigation, the LSP stated that it did not occur to him to test the groundwater.

Confirming that the LSP's assessment of this area had been inadequate, a subsequent assessment by a different LSP identified lead concentrations up to 15,000 mg/kg (which exceeds DEP's Upper Concentration Limit) in the soil below the clean backfill. Arsenic, chromium and cyanide were also identified in the soil (with cyanide at levels slightly exceeding DEP's Method 1, S-1 cleanup standard). In addition, cyanide was identified in the groundwater at levels above DEP's Method 1, GE-3 cleanup standard for cyanide.

Finally, DEP complained, and the Board found, that the LSP had erred in submitting the RAO for the entire 7.6 acre property without conducting any assessment beyond the 100-square-foot area of stained soil.

Summary of Findings

At the conclusion of its investigation, the Board found that the LSP's professional conduct at the site was seriously deficient and constituted major violations of two provisions of the Board's Rules of Professional Conduct. Specifically, the LSP violated 309 CMR 4.03(5), which requires all LSPs to "follow the requirements and procedures set forth in the applicable provisions of M.G.L. c. 21E and [DEP's regulations]". The LSP also violated 309 CMR 4.02, which requires all LSPs to "act with reasonable care and diligence and apply the knowledge and skill ordinarily required of [LSPs] in good standing practicing in the Commonwealth at the time the services are performed."

The LSP waived his/her right to an adjudicatory hearing by not filing an answer to the Order to Show Cause issued by the Board.

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LSP Complaint No. 96-02

PUBLIC CENSURE

In December 2000, the Board and the LSP entered into an Administrative Consent Order with the Board whereby the LSP agreed to reach a resolution by accepting a Public Censure and agreeing to obtain credits in Board-approved courses in the areas of site assessment and remediation technology. The LSP has not admitted wrongdoing or assented to the facts as found by the Board.

This agreement was reached after the LSP requested an administrative hearing to review the Order to Show Cause issued by the Board in the above referenced case. This action resulted from a complaint filed by the Department of Environmental Protection ("DEP").

Background of Case

On March 7, 1994, the LSP submitted an LSP Evaluation Opinion ("Opinion") in regard to a disposal site ("the Site") that had been part of a former tannery. In the Opinion, the LSP stated that the Site met the MCP requirements for a Class A or Class B Response Action Outcome ("RAO").

In preparing the Opinion, the LSP knew or should have known that some documentation existed suggesting large-scale disposal of tannery waste on the Site. The LSP also knew or should have known that little documentation existed to indicate that such wastes had been removed. The LSP placed undue reliance upon previous assessment reports that were focused upon groundwater at the Site rather than upon assessment of soil and conducted limited soil sampling and only took groundwater

samples from two pre-existing monitoring wells. In January 1996, after auditing the Opinion, the DEP issued a Notice of Audit Findings and Notice of Noncompliance ("NOAF"). In the NOAF, DEP stated that the LSP had not undertaken sufficient assessment and that the performance standards for an RAO had not been achieved. DEP directed that additional sampling be undertaken at the Site. The LSP pointed out that two other LSPs who had completed non-21E-related evaluations of the Site disagreed with DEP's determination that the LSP had undertaken insufficient assessment in preparing the Opinion.

As a result of soil sampling undertaken at the Site in response to the NOAF, the LSP uncovered over 3,300 tons of contaminated soil. This amount included approximately 2,200 tons of soil contaminated with chromium, cadmium and other hazardous materials at levels above applicable Method 1 standards and approximately 1,100 tons of arsenic contaminated soil. Arsenic was discovered at levels in excess of Imminent Hazard levels in the top six inches of soil in an area adjacent to the street that was within 500 feet of a residence.

In or around the beginning of April 1996, the LSP and/or members of the LSP's firm contacted a lined landfill facility regarding disposal of the contaminated soil from the Site. A representative from the lined landfill suggested to a member of the LSP's firm that the contaminated soil might be suitable for treatment at a nearby thermal desorption facility, operated by another company. The LSP informed the representative from the lined landfill that the LSP would authorize transport of the material to the thermal desorption facility if the treatment was appropriate for it. The LSP relied on the statements of the landfill facility's representative that the contaminated soil could be treated at the thermal desorption facility.

On April 8, 1996, the representative from the lined landfill wrote a letter to a member of the LSP's firm stating that the contaminated material would be sent to the thermal desorption facility. On April 12, 1996, the LSP filed an Immediate Response Action Plan ("IRA") stating that 800 cubic yards of arsenic contaminated soil would be disposed of at a lined landfill. The LSP never submitted a modified IRA plan nor otherwise informed DEP that any contaminated soil from the Site would be sent to a thermal desorption facility rather than a lined landfill. DEP has since stated that, had the LSP filed a modified plan, DEP would have denied it because thermal desorption treatment does not remove metals such as arsenic and chromium from soil.

On or about May 8, 1996, representatives from the thermal desorption facility came to the Site to collect samples of the contaminated soil. The facility analyzed these samples only for the presence of oil and coal tar contamination and not for the presence of metals, and also conducted a test burn. The LSP on the bill of lading indicated that the soil contained "nonhazardous tannery wastes." The thermal desorption facility's permit stated that it was only authorized to receive and treat soil contaminated with non-hazardous used oil or coal tar. The LSP was not present at the Site when the samples were collected; did not review the sampling or analytical protocol the thermal desorption facility intended to use; did not review the analytical results of the sampling or discuss

them with the facility, did not speak with any representative from the thermal desorption facility prior to authorizing transport of the material; did not review the facility's permit to check whether the facility could legally accept the contaminated soil; did not call regulatory agencies to inquire whether the thermal desorption facility was a suitable destination; and did not conduct research on the use and applicability of thermal desorption treatment. The Board found that, if the LSP had taken one or more of these steps, the LSP would have determined that the thermal desorption facility was an inappropriate disposal destination.

On May 28, 1996, the LSP signed a Bill of Lading authorizing transport of the contaminated soil from the Site to the thermal desorption facility. On May 30, 1996, the thermal desorption facility halted treatment of contaminated soil it had received from the Site because the soil caused opacity air emissions above the allowable opacity limits of the facility's air permit. The thermal desorption facility determined that hair and other organic material present in the contaminated soil caused smoke to be emitted from the facility's discharge stack. The soil awaiting treatment at the thermal desorption facility and the contaminated soil remaining at the Site was all eventually disposed of at a lined landfill.

Summary of Findings

After conducting its investigation, the Board found that the LSP conducted an inadequate site investigation in preparing the Evaluation Opinion and submitting an RAO. The Board, therefore, determined that the LSP had violated the Board's Rules of Professional Conduct at 309 CMR 4.03 (5) (b) (now renumbered as 309 CMR 4.03 (3) (b)) in that the LSP failed to follow the requirements and procedures set forth in applicable provisions of the MCP. The Board also found that the LSP failed to comply with two additional Board Rules of Professional Conduct: 309 CMR 4.02 (1) in that the LSP failed to act with reasonable care and diligence and apply the knowledge and skill ordinarily required of LSPs in good standing practicing in the community; and 309 CMR 4.03 (5) (c) (now renumbered as 4.03 (3) (c)) in that the LSP failed to make a good faith effort to identify the relevant and material information evidencing conditions at the Site.

The Board elected to treat as a mitigating factor that the LSP's failure to conduct an adequate assessment occurred shortly after the MCP regulations went into effect on October 1, 1993.

The Board also determined that, in failing to file an amended IRA plan indicating a switch to thermal desorption and in authorizing use of an inappropriate treatment method without adequately investigating its suitability, the LSP violated the Board's Rules of Professional Conduct. More specifically, the Board found that the LSP violated: 309 CMR 4.03 (5) (b) (now renumbered as 309 CMR 4.03 (3)); 309 CMR 4.02 (1); 309 CMR 4.03 (5) (a) (now renumbered as 309 CMR 4.03 (3) (a)) in that the LSP failed to exercise independent professional judgment; and 309 CMR 4.02 (3) which states that the LSP may rely **in part** upon the advice of one or more professionals the LSP **reasonably determines** are qualified by education, training and experience.

The LSP elected not to contest these charges at an adjudicatory hearing and entered into an Administrative Consent Order with the Board, thereby agreeing to accept a Public Censure.

[END]