

March 21, 2024

Town of Candia
Zoning Board of Adjustment (the "Board")
74 High Street
Candia, NH 03034

RE: Applicant's Response to Stantec Review and ZBA Requests - VARIANCE
Application of Candia Tank Farm, LLC and its operational affiliate Rick Wenzel Oil
Company, Inc. ("Applicant") – ZBA Case #24-001 (the "Application")

Introduction

The purpose of this communication is to (a) respond to the various points raised in the review of the Application by Stantec Consulting Services Inc. dated February 25, 2024, a copy of which is included as Exhibit A (the "Stantec Review") and to, pursuant to the specific decision of the Board at its January 30, 2024 meeting, (b) amend the form of the Application with respect to the provision of the Town of Candia Zoning Ordinance (the "Ordinance") from which variance is sought from Section 5.02 (a use variance) to Section 2.02B (an expansion of a non-conforming use).

Since the Stantec Review discussed specific variance criteria, we will address item (b) from the foregoing sentence in turn in the Stantec Review below. We note for the record that the Applicant has held in person meetings with Bryan Ruoff, PE, of Stantec on March 11, 2024, and with the Town of Candia Fire Chief on March 19, 2024. This response is delivered shortly thereafter.

The Applicant's responses below are numbered corresponding to the numbers in the Stantec Review.

1. Schedule 1 includes a revised application addressing the variance criteria as a matter of state law under RSA 674:33 as pertaining to the expansion of a non-conforming use.
2. The Applicant proposes phasing the proposed improvements as follows, it being the intention of the Applicant to amortize the financial investment of the total facility proposal over time:

Phase	Item	Timeline of commencement (from final approvals)
1	Oil Facility	12 months
2	(1) 30K Propane tanks	24-48 months
3	(2) 30K Propane tanks	48-72 months
4	Building	60-72 months

3. Stantec has requested a fire safety analysis with respect to the fuel oil tank storage, pursuant to NFPA 30. See Schedule 2 attached hereto for said analysis.

4. Following the Applicant's consultation with Stantec, we have mutually determined that the inquiry raised in item 4 of the Stantec Review pertains to Site Plan Regulations which fall under the subject matter jurisdiction of the Planning Board rather than the Zoning Board of Adjustment. However, the Applicant has held an on-site meeting with Town of Candia Fire Chief who has confirmed that the available water supply consisting of a proposed 10,000 gallon on-site cistern and the fire pond located approximately 1,600 feet to the west are vastly more than adequate. Additionally, the Applicant is providing supplemental training to the Candia Fire Department prior to any propane operations commencing, the details of which are being confirmed between the Applicant and the fire department.

5. Please see item #5 in the addendum to the Fire Safety Analysis included at Schedule 3. In summary, NFPA 58 requires a minimum setback of 20 feet between propane and fuel oil facilities. The Application proposes a minimum of 50 feet.

6. Regulation of groundwater protection associated with Above Ground Petroleum Facilities falls under the exclusive jurisdiction of the New Hampshire Department of Environmental Services (DES) pursuant to Administrative Rule Env-Or 300 et. Seq. The requirements under this administrative rule are rigorous and comprehensive. Analysis thereof is necessarily outside of the scope of the local Zoning Board of Adjustment because it is unlikely that municipal bodies will have the resources to analyze the same. The Applicant is required to comply with all applicable DES regulations, which include comprehensive design standards, a documented Spill Prevention, Control, and Countermeasure Plan (SPCC Plan), and regular mandatory inspections. The comprehensive DES regulation preempts local regulation, and the Applicant will at all times comply with DES regulations. For informational purposes, the table of contents of Env-Or 300 are included as Schedule 4, demonstrating the comprehensive regulation by NH DES. See also compliance statement included at Schedule 2.

7. The Applicant has confirmed with the Town of Candia Fire Department Chief that the referenced fire pond is unquestionably sufficient to provide an adequate water supply.

8. Please see letter from Ted Lemoth, PE, attached as Schedule 5. NFPA 58 requires certain setbacks and an extremely comprehensive set of safety designs for Liquefied Petroleum Gas Bulk Plants. The Applicant's proposal is designed to meet all such requirements, and the Applicant hereby certifies for the public record that it will meet (or exceed) those requirements. While it is imprudent to speak in absolute terms such as "impossible," there is no plausible set of facts that can be articulated that could result in "propane leak(s) mitigating [migrating] to adjacent properties and an ignite from a potential ignition source." Put differently, while we do not like to say anything is impossible, we cannot locate or conceive of evidence that would make this theoretical migration and ignition possible. See further discussion in letter from Ted Lemoth, PE, attached as Schedule 5.

9. Please see letter from Ted Lemoth, PE, attached as Schedule 5. Similar to the discussion with respect to a migrating propane leak discussed above, a boiling liquid expanding vapor explosion ("Bleve") is a theoretical concern that has proven to be unrealistic and extremely unlikely in reality. As noted in Schedule 5, no Bleve at a facility such as that which is proposed has occurred in more than 25 years, and none has occurred in a facility designed under the current NFPA 58 standards promulgated in 2008.

10. Appendix E to the fire safety analysis provided with the initial application details the improvements of the transfer station. There will be no public access to the transfer station and all individuals operating the transfer station will be appropriately trained. See also discussion included in Schedule 2.

11. Per our meeting with the Candia Fire Department Chief and his concurrence, the preference is to have the specific facilities secured rather than the entire site, with the existing gate to remain.

12. The response times of the Candia Fire Department have been included in the addendum to the Fire Safety Report included at Schedule 2. The Candia Fire Department Chief has confirmed that this response time, in combination with the response times of adjacent communities and all other measures in place, is adequate for appropriate safety measures.

13. This table in the Fire Safety Analysis describes alternative methods for facilities that lack adequate water supply. As noted above, the proposed facility does not lack

adequate water supply. Nevertheless, the Applicant's proposal will as a matter of additional protection and redundancy, include the voluntary additional measures described in Schedule 2.

14. See Schedule 1 for Applicant's amendment to the application providing a detailed analysis of the variance criteria under RSA 674:33.

15. The Applicant is in agreement with the Town of Candia Fire Department Chief to provide any and all assistance requested with respect to the Fire Department's response plan. We also welcome the Town of Candia Emergency Management Director to provide input and guidance on this plan before it is finalized.

Summary

We trust that the additional clarifications and information provided with this submission address inquiries raised by Stantec Consulting Services Inc. We welcome Stantec and the Board to discuss any additional questions they may have, or further clarifications they may require. Further, we realize that an application of this nature may take more time and discussion than other applications before this Board. As such, the Applicant hereby agrees to toll the deadlines for the Board's decision required under RSA 674:33 VIII until such time as the Board is satisfied that it has received all of the information it needs to answer any questions it or its third party reviewing consultant may have. Thank you.

Sincerely,



Christopher Swiniarski
Attorney for Rick Wenzel Oil and Candia
Tank Farm, LLC

Scan to add my contact information:



Schedule 1

Revised variance application of Candia Tank Farm, LLC and its operational affiliate Rick Wenzel Oil Company, Inc. (“Applicant”) – ZBA Case #24-001 (the “Application”)

The Applicant submits this revised narrative addressing the criteria for a variance under RSA 674:33 at the request of the Candia Zoning Board of Adjustment (the “Board”) made at its January 30, 2024 meeting. Specifically, the Application previously sought a use variance from Section 5.02 of the Town of Candia Zoning Ordinance (the “Ordinance”), as the Applicant’s proposed use is designated as (c-7) in the Ordinance and not expressly permitted in the C and MX districts where the property is located. The use however does currently exist on the subject property, and the Application consists of an expansion of that use. At its January 30, 2024 meeting, the Board made a determination that the application should instead be characterized as a request for variance from Section 2.02B, which prohibits the expansion of a non-conforming use.

Legal Criteria for Granting a Variance under RSA 674:33

As a threshold issue, it is important to note that the legal requirements for variance are not subject to interpretation by any Zoning Board of Adjustment, any attorney, engineer, or third party consultant. The legal requirements for a variance are set forth by the legislature in RSA 674:33, which has been interpreted by the New Hampshire Supreme Court in more than forty (40) years of caselaw and jurisprudence¹.

It also important to note that a Zoning Board of Adjustment must base its findings upon credible evidence in the official record of the Application. It is well settled law of New Hampshire that “the decision of the board must be based on more than mere personal opinion of the board members.” Barrington East Cluster I Unit Owners’ Ass’n v. Town of Barrington, 121 N.H. 627, 631 (1981). The Board cannot ignore or disregard uncontroverted expert advice or opinion. Condos East Corp. v. Town of Conway, 132 N.H. 431, 438, (1989).

1. Granting the variance will not be contrary to the public interest.

Under New Hampshire law, for a variance to be contrary to the public interest, it must “unduly and to a marked degree” violate the Ordinance’s basic zoning objectives. Chester Rod & Gun Club v. Town of Chester, 152 NH 577, 581 (2005). Additionally, the Supreme Court has held that to determine whether the ordinance’s basic zoning objectives would be violated, the Board must ascertain whether the variance would “alter the essential character of the locality” or

¹ Indeed the judicial interpretation of the variance criteria of RSA 674:33 began long before the first enactment of 674:33 more than 40 years ago.

“threaten the public health, safety, and welfare.” Malachy Glen v. Town of Chichester, 155 N.H. 105, 106 (2007).

Expanding the already existing non-conforming use does not in any way violate the Ordinance’s basic zoning objectives. The “Land Use & Planning Strategy” designated in the Master Plan for the area in which the Project is located calls for “increased economic growth and development for the town” and a Highway Corridor Overlay District for the Rt. 27 corridor with incentives to encourage new commerce, services and businesses serving town residents (See 2017-2027 Master Plan, page 29). In the case at hand, the proposed expansion is simply one that is necessary as a result of the expansion of the community and the growth of Candia in accordance with its Master Plan. The Project precisely meets these goals by expanding an existing business that serves residents of Candia and other towns in New Hampshire.

The proposed expansion also poses no undue threat to the health, safety, and welfare of the public, being designed to the strictest standards of the industry as described in excruciating detail in the Fire Safety Analysis and addendum thereto and additional materials of the Application. The expansion will be designed to be compliant with the strict standards of NFPA 58 as pertaining to propane storage, and NFPA 30 as pertaining to fuel oil. Fuel oil storage is also heavily regulated by the NH DES pursuant to Env-Or 300. Further, the Applicant has consulted with the Town of Candia Fire Chief who has concluded that the design and safety measures are more than adequate in terms of protection. There is simply no credible evidence in the record to suggest any threat to the health, safety, and welfare of the public, and no evidence to contradict the Applicant’s expert testimony by professional engineers and expert consultants in propane and petroleum safety. Further, the Applicant will be compliant with all laws regulating the same which are beyond the scope of the Board, including NFPA 30, NFPA 58, and Env-Or 300 et seq.

Further, the Project would not alter the essential character of the neighborhood, given that it already exists as a use at the Property. This existing use is compatible with the area which also hosts a variety of commercial uses, with an extensive existing vegetative buffer. Because the Project both meets the economic objectives of the Master Plan and is designed to meet the strictest safety standards described in the Application materials, the Project cannot reasonably be found to be contrary to the public interest as that term is interpreted by the New Hampshire Supreme Court.

2. The spirit of the ordinance will be observed.

The New Hampshire Supreme Court has held that determination of whether variance is contrary to the public interest (above) is largely similar to determining whether the spirit of the Ordinance is observed. Chester Rod & Gun Club v. Town of Chester, 152 NH 577, 581 (2005). This is because the spirit of the Ordinance is of course to generally promote the public interest.

In the case at hand, the spirit of the ordinance is observed because the proposed expansion of the existing use is consistent with the current use, has proven to be compatible with the surrounding uses for more than 30 years, and promotes the basic zoning objectives as described in criteria number 1 above. The use has been in existence since 1992 without detriment and provides needed services for the community while maintaining positive economic growth and development for the community

consistent with the Town of Candia's objectives and the spirit of the Ordinance. The expansion is heavily screened with natural vegetation and meets state of the art modern safety standards.

3. Substantial justice would be done.

The guiding rule on determining substantial justice is weighing the loss to Applicant in strictly applying the Ordinance versus the gain to the general public in such strict application of the Ordinance. *Harborside Associates, L.P. v. Parade Residence Hotel, LLC*, 162 N.H. 508, 515 (2011).

In the case before this Board, the Applicant already operates a fuel oil storage facility at the Property, a use which has existed for more than 30 years. The Applicant is simply seeking to expand its operations consistent with the expansion of demand by the residents of the community, and consistent with the objectives of the Master Plan to expand this corridor for local businesses. The notion of "Not in my Backyard" or "put it somewhere else" is a tremendous detriment to the Applicant, who already owns and operates this property that is perfectly suited for the proposed expansion.

Conversely, there is no appreciable benefit to the general public in denying the variance sought. The use already exists and has so existed for more than three decades, and the request is simply to expand that use in conformity with modern demands of community residents and modern standards. In that expansion, all new equipment will meet stringent modern safety standards of NFPA 30 and NFPA 58, and will also be vetted by NH DES and the Chief of the Candia Fire Department. There is simply no ascertainable public interest in denying the variance.

4. The proposed use will not diminish the values of surrounding properties.

Reviewing the materials included with this Application only lead to a conclusion that the values of surrounding properties will likely be enhanced by the Project. The use already exists and the surrounding properties consist of a mixed array of compatible commercial uses including auto body repair and mechanic services, and trailer and snow equipment rental. Residential uses to the rear are segregated from the facility by significant vegetation and space, though the use is in a commercial zone.

Further, the Applicant has engaged a qualified expert to provide an opinion as to whether or not expansion of the existing use will be detrimental to the values of surrounding properties. While that report is not ready at this time, the Applicant will provide it to the Board as soon as it is available.

As an example, we have provided an analysis conducted for a bulk fuel facility in Massachusetts in 2014 (see Schedule 6). While traditionally a value analysis in a different geographical area may render it irrelevant, the methodology employed in the example analysis makes it not so. In its simplest sense, the analysis compares comparable sales near bulk fuel facilities versus properties not near such facilities, and generally found no impact.

5. Special conditions exist such that literal enforcement of the ordinance results in unnecessary hardship.

The fifth prong of the variance test requires the Board to determine whether an unnecessary hardship to the Applicant results from literal enforcement of the Ordinance. RSA 674:33 provides two distinct and alternative means by which the Applicant can demonstrate unnecessary hardship, we address the most appropriate means below.

(A) For purposes of this subparagraph, "unnecessary hardship" means that, owing to special conditions of the property that distinguish it from other properties in the area:

(i) No fair and substantial relationship exists between the general public purposes of the ordinance provision and the specific application of that provision to the property; and

(ii) The proposed use is a reasonable one.

As applied to this Application, there is no fair and substantial relationship between the purpose of the Ordinance provision as it relates to the Property. The Property is unique because (1) it sits at the intersection of major routes in Candia, (2) has ample space to conduct a business use in a commercial district that will not be visible from a public right of way, and (3) already conducts the use which the applicant seeks to expand. The general policy of zoning is to carefully limit the extension and enlargement of nonconforming uses. Wunderlich v. Town of Webster, 117 N.H. 283, 286, (1977). But, "[t]owns may not refuse to confront the future by building a moat around themselves and pulling up the drawbridge." Beck v. Town of Raymond, 118 N.H. 793, 801, (1978). "Municipalities must also have their zoning ordinances reflect the current character of neighborhoods." Belanger v. City of Nashua, 121 NH 389, 393 (1981).

Here there is no fair and substantial relationship between the general public Ordinance provision prohibiting expansion of this existing use, where the use is a reasonable extension of the growth that is contemplated by the Master Plan.

Summary

The Project proposes to expand a use that has existed successfully in Candia for more than thirty (30) years. That expansion is the result of an increase in demand by the residents of Candia and the surrounding community for the service that the Applicant provides (home heating fuel). Just as the demand for the Applicant's service has grown, so has the Master Plan of the Town of Candia, which seeks to expand local businesses such as the Applicant's, in this Route 27 corridor. Therefore, because the Project clearly meets the variance criteria of RSA 674:33 and adheres to the strictest safety standards in the industry, the Applicant respectfully requests that this Board grant the variance sought and such other relief in its jurisdictions as may be necessary to complete the proposal set forth on the Plans. Thank you.

WEB ENGINEERING ASSOCIATES, INC.

111 SUMMER STREET
SCITUATE, MASSACHUSETTS 02066
1-781-844-8323

March 18, 2024

Jeffrey Wenzel
Rick Wenzel Oil
6 Hillside Avenue
Amherst, NH

**RE: Response to Comment Nos. 3 and 6 of the 3rd Party Review
Proposed Candia Oil and Propane Storage Facility
Rick Wenzel Oil, 5 High Street, Candia, NH**

Dear Mr. Wenzel:

This document pertains to the proposed oil storage facility at 5 High Street, Candia, New Hampshire. It specifically addresses Comment Nos. 3 and 6 in Stantec's 3rd party engineering review letter dated February 25, 2024. Comments relative to the propane storage facility are addressed in the revised fire safety analysis and in other documentation.

In Comment No. 3, Stantec states that the Fire Safety Analysis, which was done for the propane facility, should also include the proposed oil storage facility. The Fire Safety Analysis addresses propane in accordance with NFPA 58. NFPA 30 provides a more appropriate analysis, which is contained in Chapter 6 of the 2018 addition, entitled **Fire and Explosion Prevention and Risk Control**. Therefore, this document will specifically address the content of Chapter 6 of NFPA 30.

In Comment No. 6, Stantec recommends that the proposed alarm systems be described and an analysis be included relative to groundwater contamination in the event of a catastrophic failure. These items will also be addressed in this document.

PROPOSED OIL FACILITY DESCRIPTION

Rick Wenzel Oil proposes to install a new oil storage facility at 5 High Street, Candia, New Hampshire. The oil storage facility will be located on the portion of the property remote from Route 27 as shown on the attached site plan (Appendix A).

The new oil storage facility will be separated from and operated independently from the proposed propane storage facility and the existing oil storage facility currently located on the site. The proposed oil facility will be separated from those facilities by ~50 feet so as to minimize any risks to or from those exposures.

No. 2 fuel oil, on-road diesel fuel, and off-road diesel fuel will be stored in the new ASTs. These oil products will be loaded into household delivery trucks for off-site retail distribution. The ASTs will be replenished by 10,000-gallon transport trucks.

The new facility will consist of three new steel, horizontal, UL 142 atmospheric aboveground storage tanks (ASTs). The tank schedule will include one 40,000-gallon AST storing No. 2 fuel oil and two 15,000-gallon ASTs storing on-road and off-road diesel fuel. All piping associated with the proposed ASTs will be flanged/welded schedule 40 carbon steel. Tanks and piping will be routinely painted to prevent long term corrosion.

The ASTs will have spill prevention and overfill protection in accordance with New Hampshire administrative rule.

The ASTs will be covered by a steel, open-sided, canopy. The canopy will limit direct contact between the oil handling devices and stormwater. Stormwater accumulation will be limited to wind driven rain and snow, which will be minimized by extended eaves. The canopy will also cover all surfaces where oil is transferred.

CODE COMPLIANCE AND USE PERMIT

The proposed facility will meet all applicable requirements of Env-Or 300, Saf-FMO 300, Saf-C 6000, NFPA 1 (Fire Code), NFPA 30 (Flammable and Combustible Liquids Code), and Federal Regulations 40 CFR Part 112 (Oil Pollution Prevention).

Design plans will be certified by a New Hampshire professional engineer upon approval of the Zoning Board application. Plans will be fully vetted by the New Hampshire Department of Environmental Services (NHDES) and State Fire Marshal's office. The contractor performing the installation will be ICC certified in accordance with NHDES requirements.

Prior to placing fuel into the facility, a federally required SPCC (Spill Prevention, Control, and Countermeasure) Plan will be prepared and certified by a New Hampshire registered professional engineer. The NHDES will review all required test results and will inspect the facility prior to issuance of a use permit.

ALARMS AND GROUNDWATER MONITORING WELL EVALUATION (COMMENT NO. 6)

SECONDARY CONTAINMENT AND SPILL PROTECTION

The new ASTs will be contained inside of an impervious, steel-reinforced, concrete containment dike. The dike will be sized to meet the most stringent containment requirements of Env-Or 300, 40 CFR Part 112, and any specified Town of Candia requirements. Env-Or 300 requires that the dike have the capacity to contain the largest AST plus the greater of 10% of the largest AST or stormwater resulting from a 10-year storm. Because the oil facility will be covered by a canopy,

the containment dike will be sized according to the 10% rule (44,000 gallons). The submerged volumes of the two 15,000-gallon ASTs, as well as piping, equipment, and concrete supports, will be accounted for in the containment calculations. The concrete will be designed with control joints for crack control. Control joints will be sealed with oil compatible caulking.

A concrete spill containment system will be installed beneath truck loading and offloading operations. The concrete pad on which the trucks sit will pitch toward the AST containment dike (the dike floor is recessed below the grade of the truck loading/offloading pad). Small spills resulting from offloading and loading activities will first collect inside a concrete spill containment pen located inside the AST containment dike. Larger spills will first fill the spill containment pen and then overflow into the AST containment dike via an overflow weir.

All piping, including hose connections and loading arms, will be positioned above containment surfaces and under the canopy. Check valves and normally closed, anti-siphon valves will prevent a release of the contents of the ASTs. However, even a catastrophic release would be contained by the AST containment dike.

PROPOSED OVERFILL AND SPILL ALARM SYSTEMS

Item No. 6 of the Stantec review letter requests that the application address proposed alarms. Both overflow and sudden loss alarms are included in this section of the report. Smoke or flame detector alarms are included in the section of this report that addresses fire hazards.

All ASTs will have both mechanical and electronic inventory monitoring. The mechanical inventory monitoring system will allow the filling operator to monitor the progress of the delivery at the point of filling. The electronic inventory system will allow management to monitor fill levels remotely via the internet and cell service. Remote readouts can be monitored on PCs, tablets, and mobile phones.

The electronic system will have high level alarms that will provide an audible/visual annunciation at the truck offloading station when the content of the ASTs reaches 97% of the same fill height. The high-level alarm will de-activate the respective offloading pump in order to positively prevent a tank overflow.

In addition to overflow alarms, the inventory monitoring system will have a “sudden loss” alarm. The sudden loss alarm provides instant notification when there is an unauthorized or unexplained drop in inventory levels from the respective AST. This feature provides added protection against environmental releases, as well as liquid pool fires in the containment dike (addressed below).

GROUNDWATER MONITORING WELL EVALUATION

Item No. 6 of the Stantec review letter also requests that the need for groundwater monitoring wells be addressed. Typically, groundwater is most vulnerable when no containment exists or where there are underground elements associated with the facility. The proposed oil facility will consist of all aboveground tank, piping, and equipment. There will be no underground tanks, piping, or sumps in the proposed oil facility.

All aboveground elements of the facility, including the tanks, piping, equipment, and truck transfers will have impervious secondary containment as described above. All elements will be inspected on a daily and monthly basis. NHDES inspections will take place on a routine audit basis and 3rd party inspections will be conducted on interior surfaces of the ASTs in accordance with Env-Or 300. Written documentation of all inspections will be kept on file at the business office.

If all regulations and standards are met in the design, which include secondary containment, overfill prevention, and appropriate maintenance and training, groundwater monitoring wells would not be necessary. Note that NHDES will not permit use of the ASTs until all regulations and standards are met.

FIRE AND EXPLOSION PREVENTION AND RISK CONTROL (COMMENT NO. 3)

FIRE AND EXPLOSION PREVENTION AND RISK CONTROL

Chapter 6 of NFPA 30, entitled, Fire and Explosion Prevention and Risk Control, applies to the hazards associated with storage, processing, handling, and use of flammable and combustible liquids. Although the Stantec review letter references the Fire Safety Analysis, Chapter 6 is more appropriate for these purposes. Paragraphs 6.4 through 6.10 address specific aspects of fire and explosion prevention and risk control.

FIRE HAZARD ANALYSIS

Various fire and explosion hazards may be present when large quantities of flammable and combustible liquids are stored. Paragraph 6.4 of NFPA 30 states: *Operations involving flammable and combustible liquids shall be reviewed to ensure that fire and explosion hazards are addressed by fire prevention, fire control, and emergency action plans.*

As stated above, only “combustible” Class II liquids will be stored at the facility (see attached SDS Sheets). NFPA 30 defines a Class II liquid as “Any liquid that has a flash point at or above 100° F and below 140° F”. The flash point is the temperature at which a liquid produces an ignitable concentration of vapors. No. 2 fuel oil and diesel fuel have flash points greater than 125° F, which means that they are Class II liquids. Class II liquids must be heated and/or atomized in order to produce an ignitable mixture.

Comparatively, gasoline, which is a “flammable” Class I liquid, has a flash point of -45° F and is ignitable at the most extreme atmospheric temperatures. NFPA uses the terms “combustible” and “flammable” to distinguish Class I liquids such as gasoline from Class II and III liquids, such as fuel oil and motor oil.

The 2015 edition of the Flammable and Combustible Liquids Code Handbook states that “*it is highly doubtful* that [Class II liquids], when used in an open system and without being heated up to or above the flash point, would present a deflagration hazard or flash fire hazard.”

To emphasize NFPA’s position on Class II liquid hazards, Exception No. 2 of Paragraph 6.4.1 literally excludes Class II liquids from the requirement to conduct a hazard analysis. Therefore, a full hazard analysis meeting the requirements of EPA’s Risk Management Plan or OSHA’s Process Safety Management plan are not included here.

No. 2 fuel oil and diesel fuel will be stored in large, closed ASTs. Due to the relatively high flash point of these products, the size of the ASTs, and the separation distance from other onsite exposures and materials, it will be very difficult for these products to reach their flash points from heat sources external to the ASTs. Further, because the ASTs are closed top, the vapor space would be too rich (insufficient oxygen) to support combustion inside the ASTs, should the product become heated. For this reason (as will be shown below), the ASTs do not require fixed fire suppression.

CONTROL OF IGNITION SOURCES

Paragraph 6.5 of NFPA 30 states that: *Precautions shall be taken to prevent the ignition of flammable vapors by sources such as the following: Open flames, Lightning, Hot surfaces, Radiant heat, Smoking, Cutting and welding, Spontaneous ignition, Frictional heat or sparks, Static electricity, Electrical sparks, Stray currents, Ovens, furnaces, and heating equipment.*

As explained in the above Fire Hazard Analysis section, Class II liquids don’t typically emit flammable vapors unless heated above their flash point. However, all precautions will be taken to eliminate ignition sources where oil is stored or handled.

Lightning protection, although not required for Class II liquids, will be provided for the canopy. The tanks, piping, loading rack, and concrete steel reinforcement will be connected to the lightning protection system. Electrical will be installed in accordance with Paragraph 7 of NFPA 30 and the National Electrical Code, including bonding and grounding. All aboveground conduits and junction boxes will be metallic.

Signage indicating No Smoking or Open Flame will be installed around the facility. There will be no open sources of heat allowed in the vicinity of the ASTs. There will be no ovens, furnaces, or heating equipment in the vicinity of the tanks. No welding or cutting will be done without a hot work permit from the Candia Fire Department.

FIRE DETECTION AND ALARM SYSTEMS AND PROCEDURES

Paragraph 6.6.1 of NFPA 30 pertains to notification systems included in emergency procedures. Specifically, it states that an approved means shall be provided for prompt notification of fire or other emergency to those identified in the emergency action plan

Emergency procedures will be developed with the Candia Fire Department. The emergency procedures will include approved notification procedures for all emergencies that may occur.

As stated above overfill and sudden loss alarms will notify company management and 3rd party repair agencies of the condition in real time. If requested, the fire department can be included in the notifications. In addition, **smoke or flame detectors** will be installed at strategic locations under the canopy. The fire department will be notified when smoke or heat is detected.

It should be noted that Paragraph 6.6.2 specifically addresses those areas, including buildings, where a potential exists for a flammable liquid spill. It addresses various forms of permissible monitoring strategies, which include personal surveillance, leak monitoring, and gas detection. Since there will be no flammable liquids (Class I liquids in accordance with NFPA 30), this section does not specifically apply. However, smoke or flame detection will be installed to meet the intent of this requirement.

FIRE PROTECTION AND FIRE PREVENTION SYSTEMS

As will be shown below, a fixed fire suppression system is not required at this facility. Fire protection will be provided by the Candia Fire Department and surrounding mutual aid departments. Smoke alarms will notify the Candia Fire Department in the event of a fire.

Appendix H.2 of API Recommended Practice 2021, Management of Atmospheric Storage Tank Fires, states that water serves as a cooling, quenching, smothering, emulsifying, diluting, and displacing agent. It is used to cool equipment, structures, and tank shells that are exposed to the heat of a fire. It effectively absorbs heat, thus managing product temperature and inhibiting vapor formation.

When properly applied, water is suitable for extinguishing fires involving Class II combustible liquid hydrocarbons (such as No. 2 fuel oil and diesel fuel). Extinguishment will result if the surface of the fuel can be cooled below the liquid's flash point (such as in liquid pool fires) or the external surfaces of a steel storage device can be cooled to prevent heat from conducting through its shell.

There are two goals of managing a fire at a Class II liquid storage facility: liquid pool fires and fire exposure. Liquid pool fires pertain to spilled fuel that ignites. In this case, the liquid pool fire would be confined to the AST containment dike. Fire exposure pertains to the conduction of heat from an external source through the wall of the AST, resulting in heating of the stored product.

LIQUID POOL FIRE: Paragraph 7.3 of NFPA 15 provides water requirements for flammable and combustible liquid pool fires. Paragraph 7.3.3 states: *Water spray systems designed to control pool fires resulting from a flammable or combustible liquid spill fire shall be designed to apply a net rate of not less than 0.30 gpm/ft² of protected area.*

The proposed oil containment dike defines the extent of the liquid pool fire. The dimensions of the dike are ~58 feet long by ~38 feet wide. Therefore, the water requirements are:

58 feet x 38 feet x .30 gallons per minute/sq. ft. = 661.2 gallons per minute.

As shown in the propane Fire Safety Analysis, the Candia Fire Department possesses two engines. These engines are capable of providing 1250 and 1500 gallons per minute respectively. Each engine has a 1,000-gallon water capacity. The Candia Fire Department also has one tanker capable of storing 3,500 gallons. A 10,000-gallon cistern will be provided on site. There is a static pond within 1,700 feet of the facility. Therefore, the Candia Fire Department can provide sufficient water to address a liquid pool fire. Mutual aid departments will have additional engines to provide water as required.

FIRE EXPOSURE: paragraph 7.4 of NFPA 15 provides water requirements for fire exposure (cooling tank surfaces that are exposed to fire). Paragraph 7.4.2.1 states: *Water spray shall be applied to vessel surfaces (including top and bottom surfaces of vertical vessels) at a net rate of not less than 0.25 gpm/ft² of exposed surface.*

Assuming that all three ASTs are exposed to an external fire source, the sum total of exposed surface area associated with the 40,000-gallon and two 15,000-gallon ASTs was calculated to be ~5,800 square feet.

5,800 square feet x .25 gallons per minute per square foot = 1456 gallons per minute.

As discussed above, the Candia Fire Department can provide sufficient water to address tank surface cooling. Note that surface cooling requirements and liquid pool fire requirements are not additive since one hose stream can address both concerns simultaneously (the liquid pool fire would be directly below the ASTs being cooled).

It should be noted that the Candia Fire Department is an abutter to the property. The response time of the Candia Fire Department is between 1 and 10 minutes, depending on the time of day of the event. In addition, mutual aid fire departments, also discussed in the propane Fire Safety Analysis, would be on site within 15 minutes of first alarm to provide additional water.

AUTOMATIC FIRE SUPPRESSION EVALUATION

Paragraph 6.7 of NFPA 30 calls for the identification of recognized fire protection and fire suppression systems and methods used to prevent or minimize the loss from fire or explosion in liquid-processing facilities.

Chapter 15 of NFPA 1 provides commentary with respect to outdoor storage. Outdoor storage is considered to include any storage area covered by a roof that provides weather protection, as long as the canopy is open on at least two sides. It is assumed that two open sides does not limit the escape of smoke or fire and allows for the application of a water hose stream. The proposed canopy will be open sided on all four sides. Therefore, it meets the intended definition of outdoor storage.

Paragraph 60.4.4.1.2, which pertains to outdoor storage, does not require fixed fire suppression at outdoor Class II liquid storage facilities where combustible liquids are stored.

In addition, paragraph 22.8.2 of NFPA 30 states that fixed-roof tanks storing Class II liquids at temperatures below their flash points shall not require a fixed fire-extinguishing system when installed in accordance with Chapter 22 of NFPA 30. Chapter 22 pertains to the design of aboveground storage tanks, which the facility will meet. Although fixed tank roofs specifically apply to vertical tanks, the paragraph can be extended to exclude horizontal tanks because both styles of tanks are closed and have a vapor space where ignitable air mixtures can be present.

Based on the above, a fixed fire suppression system is not required.

EMERGENCY PLANNING AND TRAINING

Paragraph 6.8 of NFPA 30 requires that a written emergency action plan that is consistent with available equipment and personnel be established to respond to fires and related emergencies.

Once the Zoning Board application is approved and the facility constructed, an Emergency Action Plan and an EPA required SPCC Plan will be prepared. The Emergency Action Plan will focus on both the propane and oil facilities. The Emergency Action Plan and SPCC Plan will contain emergency planning and training for fires and spills. Emergency planning and training will be coordinated with the Candia Fire Department.

INSPECTION AND MAINTENANCE

Inspection and maintenance will be included in the Emergency Action Plan and SPCC plan discussed in the previous section.

We trust that the above report satisfies your requirements. If you have any questions, please call.

Very truly yours,
Web Engineering Associates, Inc.



Robert P. Coluccio, PE
Vice President

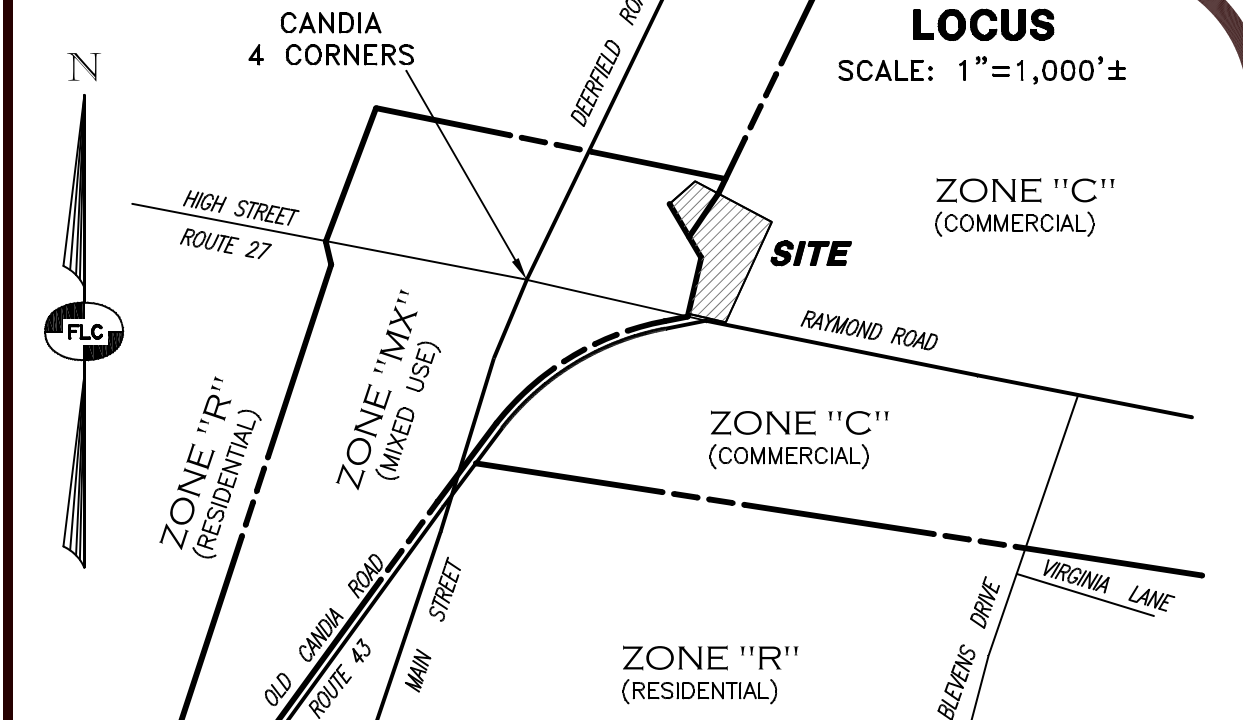
Enc: Site Plan
Safety Data Sheets

REFERENCE PLANS:

1. "PROPOSED SUBDIVISION PLAN OF LAND - OF - HAROLD J. PRATT - 35 LAKESIDE DRIVE - MANCHESTER, N.H. - LOCATED IN - CANDIA, N.H.", SCALE 1"=100', DATED JULY 1978, BY YOUNG, CAMPBELL & CATE, INC. RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #0-8251.
2. "PLAN PREPARED - FROM - PLAN OF & DEED OF - FLETCHER PERKINS - CANDIA, N.H.", SCALE 1"=100', DATED FEBRUARY 1979, BY YOUNG, CAMPBELL & CATE, INC. RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #C-8598.
3. "PROPOSED SUBDIVISION PLAN OF LAND - OF - HAROLD J. PRATT - 35 LAKESIDE DRIVE - MANCHESTER, N.H. - LOCATED IN - CANDIA, N.H.", SCALE 1"=100', DATED JULY 1980, BY YOUNG, CAMPBELL & CATE, INC. RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #0-9685.

LEGEND:

- | | | | |
|--|--------------------------|--|-----------------------------|
| | RIGHT-OF-WAY LINE | | IRON PIPE FOUND |
| | BOUNDARY LINE | | IRON PIPE PER REF. PLAN |
| | ABUTTING LOT LINE | | DRILL HOLE FOUND |
| | BUILDING SETBACK LINE | | DRILL HOLE PER REF. PLAN |
| | ZONING DISTRICT LINE | | UTILITY POLE, GUY & LIGHT |
| | EDGE OF PAVED ROAD | | WELL |
| | EDGE OF GRAVEL ROAD | | SEPTIC VENT |
| | STONE WALL | | PROPANE TANKS |
| | EDGE OF TREE LINE | | MONITORING WELL |
| | EDGE OF WETLANDS | | SINGLE SIGN POST |
| | WETLANDS BUFFER LINE | | LARGE ROCK 6'x7'x5'H. |
| | EXISTING EASEMENT LINE | | LARGE TREES |
| | PROPOSED EASEMENT LINE | | CULVERT OR DRAIN LINE |
| | 10' CONTOUR INTERVAL | | SEWER LINE |
| | 2' CONTOUR INTERVAL | | OVERHEAD UTILITY LINE |
| | WHITE PVC STOCKADE FENCE | | UNDERGROUND UTILITY LINE |
| | THE COURSE LINE | | EXISTING BUILDING/STRUCTURE |
| | FORMER TRACT LINE | | |
| | TAX MAP & LOT NUMBER | | |



NOTES:

1. OWNER OF RECORD FOR EXISTING TAX MAP 406 LOT 201 IS CANDIA TANK FARM, LLC, 6 HILLSIDE AVENUE, AMHERST, NH 03031. THE DEED REFERENCE FOR THE LOT ARE BK.5154 PG.2080 DATED OCTOBER 14, 2010 IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXPANSION OF THE EXISTING BULK FUEL STORAGE FACILITY WITH ASSOCIATED SITE IMPROVEMENTS OVER TAX MAP LOT 406-201.
3. THE TOTAL AREA OF TAX MAP LOT 406-201 IS 4.777ACRES OR 208,092 SQ.FT. WITH 200.00 FT. OF FRONTAGE ALONG HIGH STREET.
4. CURRENT ZONING FOR THE LOT IS THE COMMERCIAL DISTRICT (C) AND THE MIXED USE DISTRICT (MU). ZONING REQUIREMENTS FOR BOTH THE COMMERCIAL DISTRICT AND THE MIXED USE DISTRICT ARE:
 - MIN. LOT SIZE: 2 ACRES
 - MIN. FRONTAGE & LOT WIDTH: 200 FT.
 - MIN. FRONT SETBACK: 50 FT.
 - MIN. SIDE & REAR SETBACK: 25 FT.
 - MAX. BUILDING HEIGHT: 35 FT. OR 2.5 STORIES
5. THERE IS A 75 FT. WETLANDS BUFFER FROM DELINEATED VERY POORLY DRAINED SOILS AND A 50 FT. WETLANDS BUFFER FROM POORLY DRAINED SOILS.
6. THE BOUNDARY INFORMATION SHOWN FOR LOT 406-201 IS BASED ON THE REFERENCE PLANS CITED HEREON TOGETHER WITH A PRECISE FIELD SURVEY PERFORMED BY THIS OFFICE DURING THE MONTH OF OCTOBER 2022.
7. HORIZONTAL ORIENTATION IS BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM. VERTICAL DATUM IS NAVD88. BOTH ARE BASED ON FIELD GPS OBSERVATIONS THAT WERE UPDATED TO AND CALCULATED BY THE NOAA ONLINE POSITIONING USER SERVICE (OPUS).
8. THE SURFACE FEATURES AND SITE TOPOGRAPHY SHOWN ARE THE RESULT OF AN ON-SITE FIELD SURVEY PERFORMED BY THIS OFFICE DURING THE MONTH OF OCTOBER 2022 TOGETHER WITH THE REFERENCE PLANS CITED HEREON.
9. BUILDINGS, ROADS, STREETS AND DRIVEWAYS WERE LOCATED WITHIN 100' OF THE SUBJECT PARCEL IN ACCORDANCE WITH THE TOWN OF CANDIA SITE PLAN REVIEW REGULATIONS 4.04c.
10. JURISDICTIONAL WETLANDS SHOWN HEREON WERE DELINEATED BY CHRISTOPHER A. GUIDA, C.W.S. FROM THIS OFFICE IN OCTOBER 2022 AND ARE IN ACCORDANCE WITH THE "CORPUS OF ENGINEERS WETLAND DELINEATION MANUAL, TECHNICAL REPORT Y-87-1, DATED JANUARY 1987".
11. THE SUBJECT PARCEL IS NOT LOCATED WITHIN THE 100-YEAR FLOOD HAZARD AREA AS DETERMINED FROM THE FLOOD INSURANCE STUDY (FIRM), ROCKINGHAM COUNTY, TOWN OF CANDIA, NEW HAMPSHIRE, COMMUNITY NO. 330126, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NUMBER: 33015C0160 E, DATED: 05/17/2005.
12. THE SUBJECT PARCEL DOES NOT LIE WITHIN THE GROUNDWATER PROTECTION DISTRICT PER SECTION 11.04 OF THE TOWN OF CANDIA ZONING REGULATIONS.
13. THE SITE IS CURRENTLY SERVED BY OVERHEAD UTILITIES WITH AN INDIVIDUAL ON-SITE WELL AND SEPTIC SYSTEM. PROPANE GAS IS PROVIDED BY INDIVIDUAL ON-SITE TANKS.
14. THE UNDERGROUND UTILITIES SHOWN HEREON WERE COMPILED IN PART FROM PLANS OF RECORD AND FIELD LOCATION. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES.
15. FUEL STORAGE FACILITIES SHALL NOT BE LOCATED NEARER THAN 300 FEET TO ANY EXISTING OR PERMITTED DWELLING.

REV.	DATE	DESCRIPTION	C/O	DR	CK

CONCEPT PLAN
TAX MAP 406 LOT 201
(5 HIGH STREET)
CANDIA, NEW HAMPSHIRE 03034
 PREPARED FOR:
RICK WENZEL OIL COMPANY
 5 HIGH STREET, CANDIA, NH 03034
 LAND OF:
CANDIA TANK FARM, LLC
 6 HILLSIDE AVENUE, AMHERST, NH 03031

SCALE: 1"=50' FEBRUARY 28, 2022

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs

206 Elm Street, Milford, NH 03055
 Phone: (603) 672-5456 Fax: (603) 413-5456
 www.FieldstoneLandConsultants.com

HIGH STREET
 VARIABLE WIDTH R.O.W.
 PAVED - 16'± WIDE

- SIGN LEGEND:**
- S1="HIGH STREET" & "Y" INTERSECTION SYMBOL
 - S2="27 EAST"
 - S3="27 WEST"
 - S4="SPEED LIMIT 35"
 - S5="JUNG 43"
 - S6="LIGHT AHEAD"
 - S7="STOP"
 - S8="27 WEST/NORTH 43"
 - S9="TO SOUTH 43"

A.K.A. N. H. ROUTE OLD 101
 & SOUTH SIDE ROAD
 N.H.D.O.T. HWY. PROJECT NO. 51112
 FED. AID PROJECT NO. 115 (3)
 MARCH 9, 1940

409-197
BRANCH
BROOK HOLDINGS, LLC
 P.O. BOX 202
 CANDIA, NH 03034
 BK 5274 PG 2995 12/10/11
 (65 RAYMOND ROAD)

409-197-1
BRANCH
BROOK HOLDINGS, LLC
 P.O. BOX 202
 CANDIA, NH 03034
 BK 5114 PG 1358 5/28/10
 (71 RAYMOND ROAD)

409-196
RALPH H. DARRAH, SR.
& LINDA ROLLINS
 P.O. BOX 318
 CANDIA, NH 03034
 BK 3525 PG 519 12/1/00
 (83 RAYMOND ROAD)





1. IDENTIFICATION

Product Identifier No. 2 Fuel Oil

Synonyms: No. 2 Heating Oil, #2 Fuel Oil, Heating Oil Plus™, Low Sulfur Heating Oil (LSHO), Ultra Low Sulfur Heating Oil (ULSHO)

Intended use of the product: Fuel

Contact: Global Companies LLC
Water Mill Center
800 South St.
Waltham, MA 02454-9161
www.globalp.com

Contact Information: EMERGENCY TELEPHONE NUMBER (24 hrs.): CHEMTREC (800) 424-9300
COMPANY CONTACT (business hours): 800-542-0778

2. HAZARD IDENTIFICATION

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Classification (GHS-US):

Flam. Liquid	Category 3	H226
Skin Corrosion/Irritation	Category 2	H315
Aspiration Hazard	Category 1	H304
Acute toxicity – Inhalation	Category 4	H332
STOT SE	Category 3	H336
Carcinogenicity	Category 2	H350
Aquatic Chronic	Category 2	H411
Eye damage/Irritation	Category 2	H319

Labeling Elements



Signal Word (GHS-US):

Hazard Statements (GHS-US):

Danger

H226 – Flammable liquid and vapor.
H315 – Causes Skin irritation.
H304 – May be fatal if swallowed and enters airways.
H332 – Harmful if inhaled.
H336 – May cause drowsiness or dizziness.
H350 – May cause cancer.
H411 – Toxic to aquatic life with long lasting effects.
H319 – May cause eye damage/irritation.

Precautionary Statements (GHS-US):

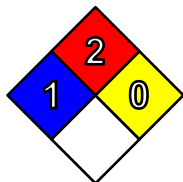
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 – Ground/bond container and receiving equipment.



P241 – Use explosion-proof electrical/ventilating/lighting equipment pursuant to applicable electrical code.
P242 – Use only non-sparking tools.
P243 – Take precautionary measures against static discharge.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 – Wash skin thoroughly after handling.
P271 – Use only outdoors or in a well-ventilated area.
P273 – Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P303+361+353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse with water/shower.
P308+311 - If exposed or concerned: Get medical advice/attention.
P301+310 - If swallowed: Immediately call a poison center/doctor/...
P331 - Do NOT induce vomiting.
P370+P378 – In case of fire use firefighting foam or other appropriate media for Class B fires to extinguish.
P403+235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 – Dispose of contents/container in accordance with local/regional/national/international regulation.

Other information:

NFPA 704
Health: 1
Fire: 2
Reactivity: 0



3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Composition Information

Mixture

Name	Product Identifier (CAS#)	% (w/w)	Classification
No. 2 Fuel Oil	68476-30-2	95-100	Flam Liq. 3, H226; Skin Irrit. 2, H315; Aspiration 1, H304; STOT SE 3, H336; Carc.2. H350; Aquatic chronic 2, H411
Methyl Esters	N/A	0-5	N/A
Naphthalene	91-20-3	0.1	Carc. 2, H351; Acute Tox. 4, H302; Aquatic Acute 1, H400; Aquatic Chronic 1, H411

Additional Formulation Information:

No. 2 Fuel Oil consists of C9+ hydrocarbons resulting from distillation of crude oil.

Low Sulfur Heating Oil typically contains less than 500 ppm of sulfur

Ultra Low Sulfur Heating Oil typically contains less than 15 ppm of sulfur



4. FIRST AID MEASURES

Route	Measures
Inhalation	Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.
Ingestion	Aspiration Hazard: DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Ingestion may cause gastrointestinal disturbances including irritation, nausea, vomiting, and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory failure, and death.
Eye Contact	In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention. In case of contact lenses, remove immediately.
Skin Contact	Remove contaminated clothing and shoes. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and of the area of the body burned.

Most Important Symptoms

Contact with eyes and face may cause irritation. Long-term exposure may cause dermatitis (itching, irritation, pain and swelling).

Inhalation may cause irritation and significant or long term exposure could cause respiratory insufficiency and pulmonary edema.

Ingestion may cause aspiration, gastrointestinal disturbance, and CNS effects.

Immediate Medical Attention and Special Treatment

For contact with skin or eyes, immediately wash or flush contaminated eyes with gently flowing water. If possible, irrigate each eye continuously with 0.9% saline (NS). If ingested, rinse mouth. Do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).

If inhaled, administer oxygen or establish a patent airway if breathing is labored. Suction if necessary. Monitor closely, anticipate seizures. Consider orotracheal or nostracheal intubation of airway control if patient is unconscious or is in severe respiratory distress.

Discard any clothing or shoes contaminated as they may be flammable.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Foam, carbon dioxide, dry chemical are most suitable

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, firefighting foam, or Halon. Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment.

LARGE FIRES: Foam, carbon dioxide, dry chemical. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Specific Hazards / Products of Combustion

Moderate fire hazard when exposed to heat or flame with a very low flash point. Product is flammable and easily ignited when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Combustion may produce smoke, carbon monoxide and other products of incomplete combustion.

Special Precautions and Protective Equipment for Firefighters

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water.



For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied firefighting foam.

Fighting Equipment/Instructions

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full face piece and protective clothing.

Refer to Section 9 for fire properties of this chemical including flash point, auto ignition temperature, and explosive limits.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY SPCC, SPILL CONTINGENCY or EMERGENCY PLAN.

Personal Precautions

Due to high vapor density, flammable / toxic vapors may be present in low lying areas, dikes, pits, drains, or trenches. Vapors may accumulate in low lying areas and reach ignitable concentrations. Ventilate the area. Use of non-sparking tools and intrinsically safe equipment is recommended. Potential for flammable atmosphere should be monitored using a combustible gas indicator positioned downwind of the spill area. Refer to Sections 2 and 7 for further hazard warnings and handling instructions.

Use appropriate personal protective equipment to prevent eye/skin contact and absorption. Use NIOSH approved respiratory protection, if warranted, to prevent exposures above permissible limits. Refer to Section 8. Contaminated clothing should not be near sources of ignition.

Emergency Measures

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Consider wind direction. Secure all ignition sources (flame, spark, hot work, hot metal, etc.) from area. Evaluate the direction of product travel, diking sewers, etc. to confirm spill areas. Do not touch or walk-through spilled material. For large spills, isolate initial action distance downwind 1,000 ft. (300 m).

Environmental Precautions

Stop the spill to prevent environmental release if it can be done safely. Product is toxic to aquatic life. Take action to isolate environmental receptors including drains, storm sewers and natural water bodies. Keep on impervious surface if at all possible. Use water sparingly to prevent product from spreading. Foam and absorbents may be used to reduce / prevent airborne release.

Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Follow federal, state or local requirements for reporting environmental release where necessary. Refer to Section 15 for further information.

Containment and Clean-Up Methods

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of firefighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with dry earth, sand or other non-combustible, inert oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container with clean, non-sparking tools for reclamation or disposal. Response and cleanup crews must be properly trained and must utilize proper protective equipment. Refer to Section 8 for appropriate protective equipment.

7. HANDLING AND STORAGE

**USE ONLY AS A FUEL.
DO NOT SIPHON BY MOUTH.**

Handling Precautions

Handle as a flammable liquid. Keep away from heat, sparks, and open flame. No smoking. Electrical equipment should be approved for classified area. Bond and ground containers during product transfer pursuant to NFPA 70 and API RP 2003 to



reduce the possibility of static-initiated fire or explosion. Follow precautions to prevent static initiated fire.

Use good personal hygiene practices. Use only with protective equipment specified in Section 8. Avoid repeated and/or prolonged skin exposure. Use only outdoors or in well ventilated areas. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves. Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API RP 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage

Large quantities of fuel oil are stored in tanks or portable containers at an ambient storage temperature. Separate from incompatible chemicals (Refer to Section 10) by distance or secondary containment. Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers that are clearly labeled. Label all secondary containers that this material is transferred into with the chemical name and associated hazard(s). Empty product containers or vessels may contain flammable vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Storage tanks should have a venting system. If stored in small containers, the area should be well ventilated, away from ignition sources and protected from potential damage or vehicular traffic. Post "No Smoking" signs in product storage areas. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code" or applicable building code. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks in Flammable and Combustible Liquid Service" and API RP 2015 "Safe Entry and Cleaning of Petroleum Storage Tanks".

Incompatibles

Keep away from strong oxidizers, ignition sources and heat.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits

Component	CAS #	List	Value
No. 2 Fuel Oil	68476-30-2	ACGIH TLV-TWA	100 mg/m3*
Naphthalene	91-20-3	ACGIH TLV-TWA	10 ppm
		OSHA PEL	10 ppm
		ACGIH STEL	15 ppm

*Critical effects; Skin; A3; CNS impairment.

Engineering Controls

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Intrinsically safe equipment and non-sparking tools shall be used in circumstances where concentrations may exceed lower flammable limits. Grounding and bonding shall be used to prevent accumulation and discharge of static electricity. Emergency shower and eyewash should be provided in proximity to handling areas in the event of exposure to decontaminate.

Personal Protective Equipment

Exposure	Equipment
Eye / Face	Wear appropriate chemical protective glasses or goggles or face shields to prevent skin and eye contact especially caused from splashing.
Skin	Wear appropriate personal protective clothing to prevent skin contact. Gloves constructed of nitrile, neoprene or PVC are recommended when handling this material. Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure.



Exposure	Equipment
Respiratory	<p>A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection and limitations.</p> <p>Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.</p>
Thermal	<p>Product is stored at ambient temperature. No thermal protection is required except for emergency operations involving actual or potential for fire. Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.</p>

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	Clear or straw-colored liquid dyed red for distribution
Odor	Mild petroleum distillate odor.
Odor Threshold	<1 ppm
pH	Not available
Melting Point	-15 °F (-26 °C)
Boiling Point Range	320 to 690 °F (160 to 366 °C)
Flash Point	>125.6 °F (52 °C) PMCC
Evaporation Rate	Slow, varies with conditions
Flammability	Flammable liquid
Flammable Limits	0.6 % - 7.5%
Vapor Pressure	0.009 psia @ 70 °F
Vapor Density	>1 (air=1)
Specific Gravity	0.81-0.88 @ 60 °F (16 °C) (water=1)
Solubility	Insoluble in water; miscible with other petroleum solvents.
Partition Coefficient (N-octanol/water)	Log Kow range of 3.3 to >.6.0
Autoignition Temperature	494 °F (257 °C)
Decomposition Temperature	When heated it emits acrid smoke and irritating vapors.
Viscosity	>3 cSt
Percent Volatiles	95-100

10. STABILITY AND REACTIVITY

Stability

This is a stable material that is flammable liquid (OSHA/GHS hazard category 3). Stable during transport.

Reactivity

Material is not self-reacting. Flammable concentrations may be present in air. Compound can react with oxidizing materials.



Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Incompatibility

Keep away from strong oxidizers such as nitric and sulfuric acids.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, static electricity, welding, smoking and other ignition sources.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Acute Toxicity (Inhalation LC50)

No. 2 Fuel Oil (68476-30-2)
LC50 Inhalation Rat >4.6 mg/l/4h

Acute Toxicity (Dermal LD50)

No. 2 Fuel Oil (68476-30-2)
LD50 Dermal Rabbit >2000 mg/kg

Acute Toxicity (Oral LD50)

No. 2 Fuel Oil (68476-30-2)
LD50 Oral Rat >12000 mg/kg

Acute Toxicity (Oral LD50)

Methyl Esters
LD50 Oral Rat >14400 mg/kg

Skin Corrosion/Irritation: Prolonged and repeated contact may cause skin irritation leading to dermatitis. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: OSHA: NO, IARC: Group 3, NTP: NO, ACGIH: NOIC:A3, NIOSH: NO

IARC: Group 3 – Not classifiable as to their carcinogenicity to humans ACGIH: A3 – Confirmed animal carcinogen with unknown relevance to humans

Petroleum middle distillates have been shown to produce skin tumors in laboratory animals following repeated and prolonged exposures. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates (byproduct of combustion of this material) carcinogenic to humans (Group 1) and NIOSH regards diesel fuel exhaust particulate as a potential occupational carcinogen.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Specific Target Organ Toxicity (Single Exposure): Inhalation exposure may cause drowsiness or dizziness by inhalation exposure.

Aspiration Hazard: The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.



Potential Health Effects: Vapor irritating to skin, eyes, nose, and throat. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

12. ECOLOGICAL INFORMATION

Toxicity

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Data for Component: No. 2 Fuel Oil (68476-30-2)

Material is toxic to aquatic organisms based on an acute basis (LC50/EC50 >1 but ≤ 10 mg/L in the most sensitive species tested).

Material is a long-term aquatic hazard based on a chronic basis (LC50/EC50 >1 but ≤ 10 mg/L in the most sensitive species tested).

Persistence and Degradation: This material is not expected to be readily biodegradable.

Bioaccumulative Potential: Not available

Mobility in Soil: Not available

Other Adverse Effects: None known

Other Information: Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options. May be considered a hazardous waste if disposed. Direct solid waste (landfill) or incineration at a solid waste facility is not permissible. Do not discharge to sanitary or storm sewer. Personnel handling waste containers should follow precautions provided in this document.

Shipping containers must be DOT authorized packages. Follow licensure and regulations for transport of hazardous material and hazardous waste as applicable.

14. TRANSPORT INFORMATION

US DOT

UN Identification Number	NA 1993
Proper Shipping Name	Fuel oil (No. 2)
Hazard Class and Packing Group	3, PGIII
Shipping Label	Combustible liquid
Placard / Bulk Package	Combustible liquid, 1993
Emergency Response Guidebook Guide Number	128

IATA Information

UN Identification Number	UN 1993
Proper Shipping Name	Fuel oil (No. 2)
Hazard Class and Packing Group	3, PGIII
ICAO Label	3
Packing Instructions Cargo	355
Max Quantity Per Package Cargo	220L
Packing Instructions Passenger	344Y
Max Quantity per Package	60L



ICAO

UN Identification Number UN 1993
Shipping Name / Description Fuel oil (No. 2)
Hazard Class and Packing Group 3, PG III
IMDG Label 3

IMDG

UN Identification Number UN 1993
Shipping Name / Description Heating Oil, Light
Hazard Class and Packing Group 3, PGIII
IMDG Label 3
EmS Number N/A
Marine Pollutant Yes

15. REGULATORY INFORMATION

U.S. Federal, State, and Local Regulatory Information

Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning And Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes
Delayed (Chronic) Health Hazard Yes
Fire Hazard Yes
Reactive Hazard No
Sudden Release of Pressure Hazard No

Clean Water Act (Oil Spills)

Any spill or release of this product to "navigable waters" (Essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA Section 103 and SARA Section 304 (Release to the Environment)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts this material. This product does not contain any chemicals subject to the reporting requirements of CERCLA Section 103 or SARA 304.

SARA Section 313- Supplier Notification

This product does not contain any chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

EPA Notification (Oil Spills)

If there is a discharge of more than 1,000-gallons of oil into or upon navigable waters of the United States, or if it is the second spill event of 42 gallons or more of oil into water within a twelve (12) month period, a written report must be submitted to the Regional Administrator of the EPA within sixty days of the event.

Pennsylvania Right to Know Hazardous Substance list:

The following product components are cited in the Pennsylvania Special Hazardous Substance List, and are present at levels which require reporting.

Component	CAS	Amount
No. 2 Fuel Oil	68476-30-2	100%



New Jersey Right to Know Hazardous Substance list:

The following product components are cited in the New Jersey Right to Know Hazardous Substance List, and are present at levels which require reporting.

Component	CAS	Amount
No. 2 Fuel Oil	68476-30-2	100%

California Proposition 65 WARNING: This product contains chemicals known to the State of California to cause Cancer or Reproductive Toxicity.

Component	CAS	Amount
Naphthalene	91-20-3	<0.1%

U.S. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Canadian Regulatory Information (WHMIS)

Class B3 – Combustible Liquid

Class D2A – Materials causing other toxic effects. (Very Toxic)

16. OTHER INFORMATION

Version	4
Issue Date	May 20, 2016
Prior Issue Date	May 3, 2015

Description of Revisions

Revised to meet Globally Harmonized System for chemical hazard communication requirements pursuant to OSHA regulatory revisions 77 FR 17884, March 26, 2012.

Abbreviations

°F	Degrees Fahrenheit (temperature)	mL	Milliliter
<	Less than	mm ²	Square millimeters
=	Equal to	mmHg	Millimeters of mercury (pressure)
>	Greater than	N/A	Not applicable
AP	Approximately	N/D	Not determined
C	Centigrade (temperature)	ppm	Parts per million
kg	Kilogram	sec	Second
L	Liter	ug	Micrograms
mg	Milligrams		

Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists	CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
AIHA	American Industrial Hygiene Association	DOT	U.S. Department of Transportation
AL	Action Level	EC50	Ecological concentration 50%
ANSI	American National Standards Institute	EPA	U.S. Environmental Protection Agency
API	American Petroleum Institute	ERPG	Emergency Response Planning Guideline
CAS	Chemical Abstract Service	GHS	Global Harmonized System



SAFETY DATA SHEET
No. 2 Fuel Oil

HMIS	Hazardous Materials Information System	REL	Recommended Exposure Limit (NIOSH)
IARC	International Agency for Research On Cancer	RVP	Reid Vapor Pressure
IATA	International Air Transport Association	SARA	Superfund Amendments and
IMDG	International Maritime Dangerous Goods	SCBA	Self Contained Breathing Apparatus
Koc	Soil Organic Carbon	SPCC	Spill Prevention, Control, and
LC50	Lethal concentration 50%		Countermeasures
LD50	Lethal dose 50%	STEL	Short Term Exposure Limit (generally 15
MSHA	Mine Safety and Health Administration		minutes)
NFPA	National Fire Protection Association	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
		TWA	Time Weighted Average (8 hr.)
NOIC	Notice of Intended Change	UN	United Nations
NTP	National Toxicology Program	UNECE	United Nations Economic Commission for
OPA	Oil Pollution Act of 1990		Europe
OSHA	U.S. Occupational Safety & Health Administration	WEEL	Workplace Environmental Exposure Level (AIHA)
PEL	Permissible Exposure Limit (OSHA)	WHMIS	Canadian Workplace Hazardous Materials Information System
RCRA	Resource Conservation and Recovery Act Reauthorization Act of 1986 Title III		

Disclaimer of Expressed and Implied Warranties

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

**** End of Safety Data Sheet ****



1. IDENTIFICATION

Product Identifier Diesel Fuel

Synonyms: Diesel Fuel, Motor Vehicle Diesel Fuel, Dyed Diesel, * DieselOne®, * DieselOne® w/Platinum Plus DFX, Low Sulfur Diesel (LSD), Ultra Low Sulfur Diesel (ULSD)

Intended use of the product: Fuel

Contact: Global Companies LLC
Water Mill Center
800 South St.
Waltham, MA 02454-9161
www.globalp.com

Contact Information: EMERGENCY TELEPHONE NUMBER (24 hrs): CHEMTREC (800) 424-9300
COMPANY CONTACT (business hours): 800-542-0778

2. HAZARD IDENTIFICATION

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Classification (GHS-US):

Flam. Liquid	Category 3	H226
Skin Corrosion/Irritation	Category 2	H315
Aspiration Hazard	Category 1	H304
STOT SE	Category 3	H336
Carcinogenicity	Category 2	H350
Aquatic Chronic	Category 2	H411
Serious Eye Damage/ Irritation	Category 2B	H319

Labeling Elements



Signal Word (GHS-US):

Hazard Statements (GHS-US):

Danger

H226 – Flammable liquid and vapor.
H315 – Causes Skin irritation.
H304 – May be fatal if swallowed and enters airways.
H336 – May cause drowsiness or dizziness.
H350 – May cause cancer.
H411 – Toxic to aquatic life with long lasting effects.
H319 – May cause eye damage/irritation.

Precautionary Statements (GHS-US):

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 – Ground/bond container and receiving equipment.



SAFETY DATA SHEET

Diesel Fuel

P241 – Use explosion-proof electrical/ventilating/lighting equipment pursuant to applicable electrical code.
P242 – Use only non-sparking tools.
P243 – Take precautionary measures against static discharge.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 – Wash skin thoroughly after handling.
P271 – Use only outdoors or in a well-ventilated area.
P273 – Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P303+361+353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse with water/shower.
P308+311 - If exposed or concerned: Get medical advice/attention.
P301+310 - If swallowed: Immediately call a poison center/doctor/...
P331 - Do NOT induce vomiting.
P370+P378 – In case of fire use firefighting foam or other appropriate media for Class B fires to extinguish.
P403+235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 – Dispose of contents/container in accordance with local/regional/national/international regulation.

Other information:

NFPA 704
Health: 1
Fire: 2
Reactivity: 0



3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Composition Information

Mixture

Name	Product Identifier (CAS#)	% (w/w)	Classification
Diesel Fuel	68476-34-6	100	Flam Liq. 3, H226; Skin Irrit. 2, H315; Aspiration 1, H304; STOT SE 3, H336; Carc.2. H350; Aquatic chronic 2, H411
Naphthalene	91-20-3	<0.1	Carc. 2, H351; Acute Tox. 4, H302; Aquatic Acute 1, H400; Aquatic Chronic 1, H410

Additional Formulation Information:

Diesel Fuel consists of C9+ hydrocarbons resulting from distillation of crude oil.

Low Sulfur Diesel Fuel typically contains less than 500 ppm of sulfur

Ultra Low Sulfur Diesel Fuel typically contains less than 15 ppm of sulfur



4. FIRST AID MEASURES

Route	Measures
Inhalation	Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.
Ingestion	Aspiration Hazard: DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Ingestion may cause gastrointestinal disturbances including irritation, nausea, vomiting, and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory failure, and death.
Eye Contact	In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention. In case of contact lenses, remove immediately.
Skin Contact	Remove contaminated clothing and shoes. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and of the area of the body burned.

Most Important Symptoms

Contact with eyes and face may cause irritation. Long-term exposure may cause dermatitis (itching, irritation, pain and swelling).

Inhalation may cause irritation and significant or long term exposure could cause respiratory insufficiency and pulmonary edema.

Ingestion may cause aspiration, gastrointestinal disturbance, and CNS effects.

Immediate Medical Attention and Special Treatment

For contact with skin or eyes, immediately wash or flush contaminated eyes with gently flowing water. If possible, irrigate each eye continuously with 0.9% saline (NS). If ingested, rinse mouth. Do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).

If inhaled, administer oxygen or establish a patent airway if breathing is labored. Suction if necessary. Monitor closely, anticipate seizures. Consider orotracheal or nostracheal intubation of airway control if patient is unconscious or is in severe respiratory distress.

Discard any clothing or shoes contaminated as they may be flammable.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Foam, carbon dioxide, dry chemical are most suitable

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, firefighting foam, or Halon. Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment.

LARGE FIRES: Foam, carbon dioxide, dry chemical. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Specific Hazards / Products of Combustion

Moderate fire hazard when exposed to heat or flame with a very low flash point. Product is flammable and easily ignited when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Combustion may produce smoke, carbon monoxide and other products of incomplete combustion.

Special Precautions and Protective Equipment for Firefighters

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water.



For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied firefighting foam.

Fighting Equipment/Instructions

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full face piece and protective clothing.

Refer to Section 9 for fire properties of this chemical including flash point, auto ignition temperature, and explosive limits.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY SPCC, SPILL CONTINGENCY or EMERGENCY PLAN.

Personal Precautions

Due to high vapor density, flammable / toxic vapors may be present in low lying areas, dikes, pits, drains, or trenches. Vapors may accumulate in low lying areas and reach ignitable concentrations. Ventilate the area. Use of non-sparking tools and intrinsically safe equipment is recommended. Potential for flammable atmosphere should be monitored using a combustible gas indicator positioned downwind of the spill area. Refer to Sections 2 and 7 for further hazard warnings and handling instructions.

Use appropriate personal protective equipment to prevent eye/skin contact and absorption. Use NIOSH approved respiratory protection, if warranted, to prevent exposures above permissible limits. Refer to Section 8. Contaminated clothing should not be near sources of ignition.

Emergency Measures

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Consider wind direction. Secure all ignition sources (flame, spark, hot work, hot metal, etc.) from area. Evaluate the direction of product travel, diking sewers, etc. to confirm spill areas. Do not touch or walk-through spilled material. For large spills, isolate initial action distance downwind 1,000 ft. (300 m).

Environmental Precautions

Stop the spill to prevent environmental release if it can be done safely. Product is toxic to aquatic life. Take action to isolate environmental receptors including drains, storm sewers and natural water bodies. Keep on impervious surface if at all possible. Use water sparingly to prevent product from spreading. Foam and absorbents may be used to reduce / prevent airborne release.

Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Follow federal, state or local requirements for reporting environmental release where necessary. Refer to Section 15 for further information.

Containment and Clean-Up Methods

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of firefighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with dry earth, sand or other non-combustible, inert oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container with clean, non-sparking tools for reclamation or disposal. Response and cleanup crews must be properly trained and must utilize proper protective equipment. Refer to Section 8 for appropriate protective equipment.

7. HANDLING AND STORAGE

USE ONLY AS A FUEL. DO NOT SIPHON BY MOUTH.

Handling Precautions

Handle as a flammable liquid. Keep away from heat, sparks, and open flame. No smoking. Electrical equipment should be approved for classified area. Bond and ground containers during product transfer pursuant to NFPA 70 and API RP 2003 to



reduce the possibility of static-initiated fire or explosion. Follow precautions to prevent static initiated fire.

Use good personal hygiene practices. Use only with protective equipment specified in Section 8. Avoid repeated and/or prolonged skin exposure. Use only outdoors or in well ventilated areas. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves. Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API RP 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage

Large quantities of diesel fuel are stored in tanks or portable containers at an ambient storage temperature. Separate from incompatible chemicals (Refer to Section 10) by distance or secondary containment. Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers that are clearly labeled. Label all secondary containers that this material is transferred into with the chemical name and associated hazard(s). Empty product containers or vessels may contain flammable vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Storage tanks should have a venting system. If stored in small containers, the area should be well ventilated, away from ignition sources and protected from potential damage or vehicular traffic. Post "No Smoking" signs in product storage areas. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code" or applicable building code. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks in Flammable and Combustible Liquid Service" and API RP 2015 "Safe Entry and Cleaning of Petroleum Storage Tanks".

Incompatibles

Keep away from strong oxidizers, ignition sources and heat.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits

Component	CAS #	List	Value
Diesel Fuel	68476-34-6	ACGIH TLV-TWA	100 mg/m ³ *
Naphthalene	91-20-3	ACGIH TLV-TWA OSHA PEL ACGIH STEL	10 ppm 10 ppm 15 ppm

*Critical effects; Skin; A3; CNS impairment.

Engineering Controls

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Intrinsically safe equipment and non-sparking tools shall be used in circumstances where concentrations may exceed lower flammable limits. Grounding and bonding shall be used to prevent accumulation and discharge of static electricity. Emergency shower and eyewash should be provided in proximity to handling areas in the event of exposure to decontaminate.

Personal Protective Equipment

Exposure	Equipment
Eye / Face	Wear appropriate chemical protective glasses or goggles or face shields to prevent skin and eye contact especially caused from splashing.
Skin	Wear appropriate personal protective clothing to prevent skin contact. Gloves constructed of nitrile, neoprene or PVC are recommended when handling this material. Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure.



Exposure	Equipment
Respiratory	<p>A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection and limitations.</p> <p>Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.</p>
Thermal	<p>Product is stored at ambient temperature. No thermal protection is required except for emergency operations involving actual or potential for fire. Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.</p>

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	Clear or straw-colored liquid. May be dyed red for distribution.
Odor	Mild characteristic petroleum distillate odor.
Odor Threshold	<1 ppm
pH	Not available
Melting Point	-22 to -0.4 °F (-30 to -18 °C)
Boiling Point Range	320 to 690 °F (160 to 366 °C)
Flash Point	> 125.6 °F (52 °C) PMCC
Evaporation Rate	Slow, varies with conditions
Flammability	Flammable liquid
Flammable Limits	0.6 % - 6.5%
Vapor Pressure	0.009 psia @ 70 °F
Vapor Density	> 1 (air=1)
Specific Gravity	0.83-0.86 @ 60 °F (16 °C) (water=1)
Solubility	Insoluble in water; miscible with other petroleum solvents.
Partition Coefficient (N-octanol/water)	Log Kow range of 3.3 to >.6.0
Autoignition Temperature	494 °F (257 °C)
Decomposition Temperature	When heated it emits acrid smoke and irritating vapors.
Viscosity	>3 cSt
Percent Volatiles	100

10. STABILITY AND REACTIVITY

Stability

This is a stable material that is flammable liquid (OSHA/GHS hazard category 3). Stable during transport.

Reactivity

Material is not self-reacting. Flammable concentrations may be present in air. Compound can react with oxidizing materials.



Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Incompatibility

Keep away from strong oxidizers such as nitric and sulfuric acids.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, static electricity, welding, smoking and other ignition sources.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Acute Toxicity (Inhalation LC50)

Diesel Fuel (68476-34-6)

LC50 Inhalation Rat >6 mg/l/4h

Acute Toxicity (Dermal LD50)

Diesel Fuel (68476-34-6)

LD50 Dermal Rabbit >5000 mg/kg

Acute Toxicity (Oral LD50)

Diesel Fuel (68476-34-6)

LD50 Oral Rabbit >5000 mg/kg

Skin Corrosion/Irritation: Prolonged and repeated contact may cause skin irritation leading to dermatitis. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: OSHA: NO, IARC: Group 3, NTP: NO, ACGIH: NOIC:A3, NIOSH: NO

IARC: Group 3 – Not classifiable as to their carcinogenicity to humans

ACGIH: A3 – Confirmed animal carcinogen with unknown relevance to humans.

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

IARC classifies whole diesel fuel exhaust particulates (byproduct of combustion of this material) carcinogenic to humans (Group 1) and NIOSH regards diesel fuel exhaust particulate as a potential occupational carcinogen.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Specific Target Organ Toxicity (Single Exposure): Inhalation exposure may cause drowsiness or dizziness by inhalation exposure.

Aspiration Hazard: The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Potential Health Effects: Vapor irritating to skin, eyes, nose, and throat. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of



combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

12. ECOLOGICAL INFORMATION

Toxicity:

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Data for Component: Diesel Fuel (68476-34-6)

Material is toxic to aquatic organisms based on an acute basis (LC50/EC50 >1 but ≤ 10 mg/L in the most sensitive species tested).

Material is a long-term aquatic hazard based on a chronic basis (LC50/EC50 >1 but ≤ 10 mg/L in the most sensitive species tested).

Persistence and Degradation: This material is not expected to be readily biodegradable.

Bioaccumulative Potential: Not available

Mobility in Soil: Not available

Other Adverse Effects: None known

Other Information: Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options. May be considered a hazardous waste if disposed. Direct solid waste (landfill) or incineration at a solid waste facility is not permissible. Do not discharge to sanitary or storm sewer. Personnel handling waste containers should follow precautions provided in this document.

Shipping containers must be DOT authorized packages. Follow licensure and regulations for transport of hazardous material and hazardous waste as applicable.

14. TRANSPORT INFORMATION

US DOT

UN Identification Number	NA 1993 / UN 1202
Proper Shipping Name	Diesel Fuel
Hazard Class and Packing Group	3, PGIII
Shipping Label	Combustible liquid
Placard / Bulk Package	Combustible liquid, 1993
Emergency Response Guidebook Guide Number	128

IATA Information

UN Identification Number	UN 1202
Proper Shipping Name	Combustible-Liquid, N.O.S. (Fuel, Diesel)
Hazard Class and Packing Group	3, PGIII
ICAO Label	3
Packing Instructions Cargo	310
Max Quantity Per Package Cargo	220L
Packing Instructions Passenger	309Y
Max Quantity per Package	60L

ICAO

UN Identification Number	UN 1202
Shipping Name / Description	Combustible-Liquid, N.O.S. (Fuel, Diesel)
Hazard Class and Packing Group	3, PG III
IMDG Label	3



IMDG

UN Identification Number	UN 1202
Shipping Name / Description	Combustible-Liquid, N.O.S. (Fuel, Diesel)
Hazard Class and Packing Group	3, PGIII
IMDG Label	3
EmS Number	F-E-S-E
Marine Pollutant	Yes

15. REGULATORY INFORMATION

U.S. Federal, State, and Local Regulatory Information

Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning And Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Clean Water Act (Oil Spills)

Any spill or release of this product to "navigable waters" (Essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA Section 103 and SARA Section 304 (Release to the Environment)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts this material. This product does not contain any chemicals subject to the reporting requirements of CERCLA Section 103 or SARA 304.

SARA Section 313- Supplier Notification

This product does not contain any chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

EPA Notification (Oil Spills)

If there is a discharge of more than 1,000-gallons of oil into or upon navigable waters of the United States, or if it is the second spill event of 42 gallons or more of oil into water within a twelve (12) month period, a written report must be submitted to the Regional Administrator of the EPA within sixty days of the event.

Pennsylvania Right to Know Hazardous Substance list:

The following product components are cited in the Pennsylvania Special Hazardous Substance List, and are present at levels which require reporting.

Component	CAS	Amount
Diesel Fuel	68476-34-6	100%

New Jersey Right to Know Hazardous Substance list:

The following product components are cited in the New Jersey Right to Know Hazardous Substance List, and are present at levels which require reporting.

Component	CAS	Amount
Diesel Fuel	68476-34-6	100%



California Proposition 65 WARNING: This product contains chemicals known to the State of California to cause Cancer or Reproductive Toxicity.

Component	CAS	Amount
Naphthalene	91-20-3	<0.1%

U.S. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Canadian Regulatory Information (WHMIS)

Class B3 – Combustible Liquid
Class D2A – Materials causing other toxic effects. (Very Toxic)

16. OTHER INFORMATION

Version	4
Issue Date	May 20, 2016
Prior Issue Date	May 3, 2015

Description of Revisions

Revised to meet Globally Harmonized System for chemical hazard communication requirements pursuant to OSHA regulatory revisions 77 FR 17884, March 26, 2012.

Abbreviations

°F	Degrees Fahrenheit (temperature)	mL	Milliliter
<	Less than	mm ²	Square millimeters
=	Equal to	mmHg	Millimeters of mercury (pressure)
>	Greater than	N/A	Not applicable
AP	Approximately	N/D	Not determined
C	Centigrade (temperature)	ppm	Parts per million
kg	Kilogram	sec	Second
L	Liter	ug	Micrograms
mg	Milligrams		

Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists	GHS	Global Harmonized System
AIHA	American Industrial Hygiene Association	HMIS	Hazardous Materials Information System
AL	Action Level	IARC	International Agency for Research On Cancer
ANSI	American National Standards Institute	IATA	International Air Transport Association
API	American Petroleum Institute	IMDG	International Maritime Dangerous Goods
CAS	Chemical Abstract Service	Koc	Soil Organic Carbon
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	LC50	Lethal concentration 50%
DOT	U.S. Department of Transportation	LD50	Lethal dose 50%
EC50	Ecological concentration 50%	MSHA	Mine Safety and Health Administration
EPA	U.S. Environmental Protection Agency	NFPA	National Fire Protection Association
ERPG	Emergency Response Planning Guideline	NIOSH	National Institute of Occupational Safety and Health
		NOIC	Notice of Intended Change



SAFETY DATA SHEET

Diesel Fuel

NTP	National Toxicology Program	STEL	Short Term Exposure Limit (generally 15 minutes)
OPA	Oil Pollution Act of 1990	TLV	Threshold Limit Value (ACGIH)
OSHA	U.S. Occupational Safety & Health Administration	TSCA	Toxic Substances Control Act
PEL	Permissible Exposure Limit (OSHA)	TWA	Time Weighted Average (8 hr.)
RCRA	Resource Conservation and Recovery Act Reauthorization Act of 1986 Title III	UN	United Nations
REL	Recommended Exposure Limit (NIOSH)	UNECE	United Nations Economic Commission for Europe
RVP	Reid Vapor Pressure	WEEL	Workplace Environmental Exposure Level (AIHA)
SARA	Superfund Amendments and	WHMIS	Canadian Workplace Hazardous Materials Information System
SCBA	Self Contained Breathing Apparatus		
SPCC	Spill Prevention, Control, and Countermeasures		

Disclaimer of Expressed and Implied Warranties

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

**** End of Safety Data Sheet ****

WEB ENGINEERING ASSOCIATES, INC.

111 SUMMER STREET
SCITUATE, MASSACHUSETTS 02066
1-781-844-8323

March 21, 2024

Jeffrey Wenzel
Rick Wenzel Oil
6 Hillside Avenue
Amherst, NH

**RE: Rick Wenzel Oil Fire Safety Addendum
Proposed Candia Oil and Propane Storage Facility
5 High Street, Candia, NH**

Dear Mr. Wenzel:

This document represents an addendum to Web Engineering's Propane Fire Safety Analysis dated November 5, 2023 for the proposed propane storage facility referenced above. It specifically addresses Comment Nos. 5, 8, 10, 12, and 13 in Stantec's 3rd party engineering review letter dated February 25, 2024. Comment Nos. 3 and 6 were addressed in Web Engineering's Fire Safety Analysis relative to the Oil Storage Facility. Comment 9 is addressed in a letter from Mr. Ted Lemoff, PE, former member of the NFPA 58 technical review committee (see attached). The remaining comments were addressed in a separate documentation prepared by Attorney [Christopher Swiniarski](#).

COMMENT NO. 5 – SETBACK BETWEEN PROPANE AND OIL

Item No. 5 of the Stantec letter addresses whether the setback between the propane tanks and the oil tanks is suitable for the type of liquid being stored. Paragraph 6.4.4.6 of NFPA 58 states that "*The minimum horizontal separation between aboveground LP-Gas containers and aboveground tanks containing liquids having flash points below 200°F shall be 20 feet*". No. 2 fuel oil and diesel fuel will be stored in the aboveground oil storage tanks. These products have flash points between 125° F and 140° F, which are well below 200°F. The 20-foot setback therefore applies. The actual distance between the propane and oil storage facilities will be 50+ feet.

COMMENT NO. 8 – IGNITION AT ADJACENT PROPERTIES

Item No. 8 recommends that the propane fire safety analysis include an assessment of the adjacent properties and their associated uses to determine whether there is a potential risk of a propane leak(s) migrating to adjacent properties and igniting from a potential ignition source.

To address this, Rick Wenzel Oil enlisted the services of Mr. Ted Lemoff, P.E. Mr. Lemoff's report and resume are included with this propane Fire Safety Analysis addendum. Mr. Lemoff

spent 35 years working for NFPA as a member of the technical committee that reviewed and revised NFPA 58. Mr. Lemoff authored nine editions of the NFPA 58 Handbook. He currently serves on the committee as a “special expert” with no affiliation to the propane industry, insurance, code users, or other interest category. Since retiring from NFPA in 2010, Mr. Lemoff has continued to provide consulting services as a propane safety expert.

In response to Comment No. 8, Mr. Lemoff writes: “*the Vapor Dispersion Model included in the Fire Safety Analysis incorporates the dilution of released propane as it mixes with air. The maximum distance determined is for a lower flammable limit mixture of propane in air. At greater distances the propane-air mixture has gone below the lower flammable limit of propane in air.*”

Considering the distances to abutting structures, it can be concluded that propane vapors would not be sufficiently concentrated to support ignition at the vapor dispersion distances provided in the fire safety analysis. In this respect, the hazard distances in the Fire Safety Analysis are based on conservative models. Mr. Lemoff’s full report is included with this addendum.

COMMENT NO. 10 – GUARD RAILS

Comment No. 10 addresses the absence of traffic protection at the proposed transfer area. The only transfers that will take place at the facility involve loading of bobtail trucks for offsite delivery and offloading from transport trucks into the propane tanks to replenish inventory.

As shown on the plans associated with the fire safety analysis, the equipment associated with the truck transfers is surrounded by traffic protection. Transport trucks and bobtail trucks must maneuver into position to access the transfer equipment. Rather, traffic protection is in place to protect the transfer equipment from these trucks while they are maneuvering into position.

COMMENT NO. 12 – CANDIA FIRE DEPARTMENT RESPONSE TIMES

Comment No. 12 requests response times for the Candia Fire Department. The Candia Fire Department Chief stated that the response time would vary between daytime and nighttime. Daytime response following first alarm could be as quick as one minute. During evening hours when there are no responding personnel on duty, the response time following first alarm would be closer to 10 minutes.

COMMENT NO. 13 – ALTERNATIVE METHODS

Comment No. 13 addresses the alternative methods for industrial and bulk propane storage that *lack a water supply* that are provided in Table 9.1. Stantec believed that it was unclear if any of these measures are required or are being proposed.

While the Candia Fire Department Chief has confirmed that the on-site cistern and nearby fire pond are more than adequate, Rick Wenzel Oil is voluntarily proposing the additional redundant measures that are not otherwise required. These measures are shown in the following table:

ITEMS FROM TABLE 9.1 OF THE FIRE SAFETY ANALYSIS THAT WILL BE IMPLEMENTED

Item #	Options that will be implemented
1	Reduce the service life of hoses. Typically done every 5 years. Will do it every 3 years or sooner if monthly inspection determines excessive scuffing or wear has occurred.
2	Increase frequency of equipment inspection. – Typically done annually. Will do it monthly in conjunction with the SPCC plan and annually as recommended by NPGA.
3	Establish a service life program for the maintenance of the container pressure relief devices. This could include the installation of a listed multiple port valve and certifying that the relief devices are properly set and maintained every 10 years.
4	Increase the strength of the piping and fitting systems. All liquid piping will be flanged and welded. Where equipment requires threaded, piping will be schedule 80.
5	Install emergency shutoff valves in conjunction with container internal valves. – Already incorporated into the design
6	Install emergency shutoff valves downstream of transfer pump outlets, and upstream of the vapor and liquid valves at the bulkhead. Already incorporated into the design
7	Install pneumatic tubing along the plant boundary to serve as a perimeter fire detection system. This would provide protection of the plant against exposure fires. Pneumatic tubing along the chain link fence will be incorporated into the design.
9	Increase the separation distances of internal plant exposures to the container. These exposures would include a site dumpster, idle or waste pallets and combustibles, and increasing the parking distances between the bobtails and transports in relation to the container. Already incorporated into the design (note that distance to oil tanks is 2.5 times the required distance)
10	Relocate overhead power lines away from all container and cylinder storage areas to protect against ignition in the event of a line dropping due to wind or power pole impact. All power conduits will be underground.
11	Eliminate all combustible vegetation within 30 feet of the LP-Gas container. This can be accomplished using gravel, or paving the site yard. Already incorporated into the design

We trust that the above report satisfies your requirements. If you have any questions, please call.

Very truly yours,
Web Engineering Associates, Inc.



Robert P. Coluccio, PE
Vice President

Enc.: Report by Ted Lemoff, PE

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

TABLE OF CONTENTS

CHAPTER Env-Or 300 ABOVEGROUND PETROLEUM STORAGE FACILITIES

PART Env-Or 301 PURPOSE AND APPLICABILITY

- Env-Or 301.01 Purpose
- Env-Or 301.02 Applicability
- Env-Or 301.03 Exemptions

PART Env-Or 302 DEFINITIONS

- Env-Or 302.01 Aboveground Storage Tank (AST)
- Env-Or 302.02 AST Facility
- Env-Or 302.03 AST System
- Env-Or 302.04 Calculated Maximum Safe Fill Height
- Env-Or 302.05 Cargo Truck
- Env-Or 302.06 Cathodic Protection System
- Env-Or 302.07 Cathodic Protection Tester
- Env-Or 302.08 Certified AST Inspector
- Env-Or 302.09 Certified Tank Installer
- Env-Or 302.10 Closure
- Env-Or 302.11 Combined Oil Storage Capacity
- Env-Or 302.12 Compatible
- Env-Or 302.13 Connected Piping
- Env-Or 302.14 Corrosion Expert
- Env-Or 302.15 Department
- Env-Or 302.16 Discharge
- Env-Or 302.17 Facility
- Env-Or 302.18 Field-erected AST
- Env-Or 302.19 Fittings
- Env-Or 302.20 Floodway
- Env-Or 302.21 Heating Oil
- Env-Or 302.22 Impermeable
- Env-Or 302.23 Impressed Current System
- Env-Or 302.24 Leak Monitoring System
- Env-Or 302.25 Listed Test Method
- Env-Or 302.26 Monthly
- Env-Or 302.27 Motor Fuel
- Env-Or 302.28 Oil
- Env-Or 302.29 Oil-filled Electrical Equipment
- Env-Or 302.30 On-premise Heating
- Env-Or 302.31 Operate
- Env-Or 302.32 Operator
- Env-Or 302.33 Out of Service
- Env-Or 302.34 Owner
- Env-Or 302.35 Permeability
- Env-Or 302.36 Person
- Env-Or 302.37 Pipe
- Env-Or 302.38 Piping System
- Env-Or 302.39 Public Water System
- Env-Or 302.40 Qualified Facility
- Env-Or 302.41 Release Detection
- Env-Or 302.42 Release Prevention
- Env-Or 302.43 Repair

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- Env-Or 302.44 Sacrificial Anode System
- Env-Or 302.45 Secondary Containment
- Env-Or 302.46 Shop-fabricated AST
- Env-Or 302.47 Significant Corrosion
- Env-Or 302.48 Special Flood Hazard Area
- Env-Or 302.49 Spill Prevention, Control, and Countermeasure Plan (SPCC Plan)
- Env-Or 302.50 Storage System
- Env-Or 302.51 Substantial Design Change
- Env-Or 302.52 Substantial Modification
- Env-Or 302.53 Surface Waters of the State
- Env-Or 302.54 Tank
- Env-Or 302.55 Transfer Operator
- Env-Or 302.56 Underground Piping
- Env-Or 302.57 Unusual Operating Condition
- Env-Or 302.58 Used Oil

PART Env-Or 303 REFERENCE STANDARDS

- Env-Or 303.01 Availability and Applicability of Reference Standards
- Env-Or 303.02 American Petroleum Institute
- Env-Or 303.03 NACE International
- Env-Or 303.04 National Fire Protection Association
- Env-Or 303.05 Petroleum Equipment Institute
- Env-Or 303.06 Additional Standards

PART Env-Or 304 REGISTRATION; REQUIRED NOTIFICATIONS AND RECORDS

- Env-Or 304.01 Registration of AST Systems Required
- Env-Or 304.02 Required AST System Registration Information
- Env-Or 304.03 Signature on Registration Required
- Env-Or 304.04 Registration Updates Required
- Env-Or 304.05 Change in Use
- Env-Or 304.06 Records To Be Maintained
- Env-Or 304.07 Transfer of Facility Ownership
- Env-Or 304.08 Owner Liability

PART Env-Or 305 EQUIPMENT STANDARDS

- Env-Or 305.01 Tank Standards for AST Systems Installed On or After April 25, 1997
- Env-Or 305.02 Variances Issued by State Fire Marshall
- Env-Or 305.03 AST Markings Required
- Env-Or 305.04 Piping Standards for AST Systems
- Env-Or 305.05 Additional Requirements Specific to Underground Piping
- Env-Or 305.06 Corrosion Protection for Tanks and Piping
- Env-Or 305.07 Secondary Containment for AST Systems Required
- Env-Or 305.08 Secondary Containment for ASTs
- Env-Or 305.09 Secondary Containment for AST Piping Systems
- Env-Or 305.10 Transfer Pumps
- Env-Or 305.11 Overfill Protection
- Env-Or 305.12 Interstitial Leak Monitoring for AST Systems
- Env-Or 305.13 Oil Transfer and Dispensing Areas
- Env-Or 305.14 Release Detection for AST Systems

PART Env-Or 306 OPERATING, TESTING, AND INSPECTION REQUIREMENTS

- Env-Or 306.01 Operation and On-going Maintenance
- Env-Or 306.02 Spill Prevention Control and Countermeasure Planning

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- Env-Or 306.03 Inventory Monitoring; Investigation of Discrepancies Required
- Env-Or 306.04 Cargo Truck Oil Transfers
- Env-Or 306.05 Management of Stormwater and Other Precipitation
- Env-Or 306.06 Inspection Reports: Contents and Signatures
- Env-Or 306.07 Exterior Inspections of AST Systems
- Env-Or 306.08 Inspection of Insulated Tanks and Insulated Piping
- Env-Or 306.09 Interior Inspections of ASTs
- Env-Or 306.10 Follow-up for Inventory Monitoring and Exterior and Interior Inspections
- Env-Or 306.11 Cathodic Protection Testing
- Env-Or 306.12 Annual Testing Requirements
- Env-Or 306.13 Suspected Discharge and Testing Requirements
- Env-Or 306.14 Out of Service AST Systems
- Env-Or 306.15 Reactivating Out of Service Tank Systems

PART Env-Or 307 INSTALLATION REQUIREMENTS

- Env-Or 307.01 Application for Approval of AST Systems and Piping Systems
- Env-Or 307.02 Required Applicant Information
- Env-Or 307.03 Plans and Specifications
- Env-Or 307.04 Completeness Review
- Env-Or 307.05 Decision and Application
- Env-Or 307.06 Approval to Operate Required
- Env-Or 307.07 Approval Duration; Extensions
- Env-Or 307.08 Construction Pursuant to Approval; Design Changes
- Env-Or 307.09 Requirements for AST System Installers
- Env-Or 307.10 AST System Design Standards
- Env-Or 307.11 Installation of AST Systems

PART Env-Or 308 REMOVAL; CLOSURE; REUSE

- Env-Or 308.01 Removal of AST Systems Required If Not Being Used
- Env-Or 308.02 Site Assessment After Removal
- Env-Or 308.03 Re-Use and Disposal of Used ASTs

PART Env-Or 309 SPECIAL SYSTEMS

- Env-Or 309.01 Applicability
- Env-Or 309.02 AST Systems Containing Oil that is a Solid at Atmospheric Temperature and Pressure
- Env-Or 309.03 Oil-Filled Electrical Equipment
- Env-Or 309.04 Temporary Construction AST Systems
- Env-Or 309.05 Small AST Systems Containing Heating Oil for On-Premise Heating
- Env-Or 309.06 Cargo Truck Use by Commercial/Industrial Enterprises or the Military

PART Env-Or 310 WAIVERS

- Env-Or 310.01 Applicability
- Env-Or 310.02 Waiver Requests
- Env-Or 310.03 Waiver Criteria
- Env-Or 310.04 Decision on Waiver Requests; Conditions

Tlemoff Engineering

March 19, 2024

I, Theodore Lemoff, P.E. was engaged by the Rick Wenzel Oil Company to review the concerns of the Town of Candia NH of the safety of the proposed propane storage facility in Candia. I also reviewed the third-party review of the proposed facility conducted by Stantec Consulting Services. I am a safety consultant with 39 years of experience with propane and other flammable gases. Prior to my retirement from the National Fire Protection Association (NFPA) I was the staff liaison to NFPA 58, LP-Gas Code which is adopted as law in New Hampshire, and am currently a member of the committee that writes NFPA 58. My resume is in Annex A.2 of this letter. This review covers the proposed propane installation only, and not fire safety issues of the existing fuel oil storage at the facility. I provide facts and experience which shows that the concerns are not warranted.

Installation of propane storage tanks in the United States must comply with the Liquefied Petroleum Gas Code, the American National Standard for propane storage. The short name for the code is "NFPA 58". That code is published by the National Fire protection Association (NFPA) of Quincy, Massachusetts.

The Code was first published in 1932. It is written by a balanced technical committee and is reviewed and revised every three (3) years. I was the NFPA staff liaison to the committee while I was employed by the NFPA from 1985 to 2010. I now am, and have been, since 2010, a member of the technical committee that reviews and revises the code. As staff liaison I administered the standards making process, interpreted the Code, authored 9 editions of the Liquefied Petroleum Gases Handbook, provided code interpretations, spoke on the Code and the NFPA standards making process, and provided technical advice to NFPA books, films and other products.

I serve on the committee as a "special expert" with no affiliation to the propane industry, insurance, code users, or other interest category. Since my retirement from NFPA in 2010 I provide consulting services in the fuel gas area as a safety expert. In the recent past, I was engaged in two projects where I served as an independent third-party expert to review propane storage and piping installations. One was for the U. S. Navy, to review an expanded propane storage and vaporization plant at Camp Lejeune, NC. The other was at a new shopping center in Guyana. In both cases I inspected the installation and provided a detailed report of my inspection and items that did not meet code requirements with recommendations for revisions to comply.

NFPA studies fire data in detail to provide insights about the overall fire problem, firefighter fatalities and injuries, major fire causes, fire protection systems, and many other topics¹. Estimates in the report are made using the National Fire Incident Reporting System (NFIRS) of the Federal Emergency Management Agency's (FEMA) United States Fire Administration (USFA), supplemented by the annual stratified random-sample survey of fire experience conducted by the National Fire Protection Association (NFPA), which is used for calibration.

BLEVE's of propane storage tanks of the size proposed for Candia are rare. A 2003 NFPA study shows that the number of fires at propane bulk storage plants is small, with a total of 40 fires of all types at LP-Gas Bulk Plants throughout the United States annually during the period 1994 through 1998. To the author's knowledge, subsequent years have not had significantly larger number of fires at LP-Gas Bulk Plants. The 40 annual fires include vehicle fires; structure fires; tree, brush or grass fires; outside fires involving property of value; outside rubbish fires; outside spill or leak with ensuing fires; unclassified fires, unknown-type fires; and explosions with no after-fire. During this time the average total annual direct property damage is about \$ 750,000 per year for all 50 United States. If BLEVEs occurred regularly during the period of the study, the damages would be much greater. This study has not been updated due to changes in fire data reporting protocols.

I am not aware of BLEVEs at propane storage installations similar to the proposed Candia plant in the last 25 years in the United States². In addition to being a member and attending meetings of the NFPA 58 committee about once a year I am a member and attend meetings of the National Propane Gas Association's Technology, Standards and Safety committee twice annually. If there had been a BLEVE of a propane storage tank of the size proposed for Candia, it would have been reported at one or more of these meetings. A partial list of significant propane incidents is included in Appendix A, with a brief explanation.

Historically BLEVEs were not of concern until the 1960's and 1970's when a number of derailments of tank cars containing LP-Gas and similar flammable liquefied gases were derailed with fires and BLEVEs. These were of concern to the fire service as firefighters were at risk when they attempted to fight these fires. At the time, the concept of hazardous materials was not known to the fire service, who fought fires by attacking them with hoses.

A BLEVE occurs when a container holding a liquid under pressure at a temperature above it's normal boiling point at atmospheric pressure fails.

- Water has a normal atmospheric boiling point of 212 °F. In many steam heating systems, liquid water condensed in radiators is collected in a tank where it is under pressure. If this tank fails the released water – at a

¹ <https://www.nfpa.org/News-and-Research/Data-research-and-tools>

² The last BLEVE in the U. S. was in 1998. See [Herrig Brothers Farm Propane Tank Explosion | CSB](#)

temperature above 212 °F –will flash to steam. If the temperature was lower than 212 °F, hot water and some steam will be released.

- The boiling point of propane is -40 °F. Liquid propane in a storage tank is under pressure. If the tank fails and the temperature is above -40 °F, the propane will flash to vapor with a significant increase in volume.

If a propane storage tank fails, the propane is released to the atmosphere creating propane vapor. As propane vapor occupies more space than liquid propane, a pressure wave will be generated and tank pieces can be propelled some distance in the direction of the ends of the tank. In addition, the released propane will ignite if a source of ignition is present. BLEVEs are characterized by the failed tank coming apart in multiple pieces which are often projected a distance and a fireball, if the gas is flammable as is propane.

Stationary propane tanks can fail for different reasons:

- Reduction in tank wall thickness. Tank walls are steel and external corrosion can occur. Internal corrosion is rare as propane does not contain water. Significant external corrosion reduces the wall thickness of a propane tank, and failure can occur if sufficient steel is affected. Propane tanks are designed with a safety margin or 3.5, meaning that their walls are thicker than needed by a factor of 3.5 for pressure containment. Significant corrosion would have to occur to cause tank failure. This corrosion would be visible and easily observed during routine inspections. (Propane storage tanks are required to be painted to minimize corrosion.)
- Heating. Steel will begin to soften when heated above 750° F, a temperature that is exceeded in a fire, and fire is a threat to propane storage tanks. Only fires impinging on a propane tank above the liquid level will cause failure. Below the liquid level the heat will be absorbed by the liquid in the tank and will boil. Of course, it is not evident in a fire what the liquid level is. The vast majority of propane tank BLEVEs are caused by flame from broken piping in the storage plant.

Relevant to the proposed LP-Gas storage facility in Candia, NFPA publishes NFPA 58, Liquefied Petroleum Gas Code, which is adopted as law in New Hampshire and all other states, and is used widely outside the United States.

The NFPA 58 committee is very active, and the document is revised every 3 years. Revisions over the years have recognized the threats to propane storage tanks and currently include requirements to stop the flow of propane in the event of piping failure. These requirements for sites with larger propane storage tanks (over 4,000-gallon capacity) include:

- Internal valves, which will close automatically upon fire exposure to fire or manually from another location on the site.
- Back check valves to prevent flow out from a tank in the event of pipe breakage of pipes feeding propane into the tank.

- Excess flow to stop flow from the tank in the event of excess flow caused by pipe failure.
- Emergency shutoff valves to stop flow from propane trucks driving away during loading or unloading with transfer hoses connected.

These safety valves were required for all new and existing tanks as of July 1, 2011. (Such “retroactive” requirements are unusual and reflect the importance of these safety features.)

These requirements recognize that the predominant cause of BLEVE is burning propane from broken pipes, which can be mitigated by eliminating the source of fuel. They provide for a very safe installation in Candia.

The Stantec report includes specific recommendations. Three of these, Items 8, 9, and 11 are propane related and are addressed here.

Item 8 recommends that:

The fire analysis include the assessment of the adjacent properties and their associated uses to determine whether there is a potential risk for propane leak(s) mitigating to adjacent properties and an ignite from a potential ignition source.

The Vapor Dispersion Model included in the Fire Safety Analysis incorporates the dilution of released propane as it mixes with air. The maximum distance determined is for a lower flammable limit mixture of propane in air. At greater distances the propane-air mixture has gone below the lower flammable limit of propane in air.

Item 9 recommend that:

Additional assessment should be performed and included in the fire analysis for the blast radius for a boiling liquid expanding vapor explosion (BLEVE) of the proposed propane storage tanks for review and for the record as part of the fire analysis and Application.

As previously stated, it has been over 25 years since the last BLEVE of a propane storage container of the type to be installed at the Rick Wenzel Oil Company in Candia. At least in part, this absence of BLEVE incidents is due to additional safety features added retroactively to NFPA 58. The additional safety features allow the propane storage tank valves to be closed remotely and upon fire exposure, which removes the propane fuel from a torch fire. Even if the piping system fails, the flow of propane from the storage tanks will be stopped ending any torch fire or gas release.

Item 11 states:

Form 8.2 of the fire analysis in the Application, describes the response times for local fire departments in adjacent communities but does not provide an assessment on whether the response times will allow for emergency protection measures to be implemented prior to potential impacts to adjacent properties. Additionally, given that the Candia Fire Department is a volunteer department, an analysis is also required to be performed regarding the response time for the Candia Fire Department and similarly whether that anticipated response time will allow for emergency protection measures to be implemented prior to potential impact to adjacent properties.

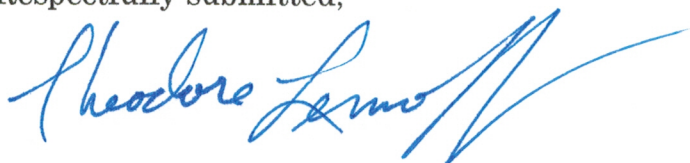
Analysis of response time from the Candia Fire Department and mutual aid companies is beyond the scope of this letter. Emergency protection measures are incorporated in the plant design and NFPA 58 requirements. As the propane tank valves are open only when propane is being added to or removed from the storage tanks and such transfers are attended by trained operators, the need for emergency responders to stop a propane storage tank fire is removed. Of course, Candia and mutual aid firefighters are needed in the event of any fire incident but they will not have to take emergency actions to protect the propane storage tanks from flame impingement, the primary cause of BLEVE.

In order to further minimize the small probability of BLEVEs the following operating procedures are recommend:

1. Ensure that all tank liquid valves be closed except when adding or withdrawing liquid propane to the tanks.
2. Install plastic air tubing connected to the tank valve pneumatic tubing along all plant piping. This will result in a release of pressure to the valve operators, which will close as they require air or nitrogen to open.
3. Test the operation of all automatic and remotely operated valves at the site annually, and make prompt repairs if needed. These tests may be witnessed by the Candia Fire Department.
4. Have the plant inspected by an independent third party every 5 years to verify that any revisions are in compliance with NFPA 58.
5. Provide stamped as built drawings to the fire department and the State Fire Marshall prior to tank filling.

Please let me know if you have any questions on this letter.

Respectfully submitted,



Theodore Lemoff, PE

Appendix A.1

Significant Propane Incidents.

NOTE: A number of propane incidents are listed here. This list is not intended to be complete, but provides a sample of typical propane incidents from various sources.

1. Turkey Farm, Albert City, IA, April 9, 1998. A BLEVE of an 18,000 gallon propane tank resulted in the death of 2 firefighters. The BLEVE was caused by an aboveground liquid propane line being broken by a motorized farm vehicle. The incident was investigated by the U. S. Chemical Safety Board, which issued recommendations to the farm, the Iowa State Fire Marshal, The Fire Service Institute of Iowa, and the National Propane Gas Association to prevent similar incidents in the future³.
2. Cortez Gas, Truth or Consequences NM, January 8, 2001. A pizza delivery truck, parked without setting the parking brake, rolled into a propane bulk storage plant and broke plant piping. A fire ensued, and filled propane cylinders on the site exploded as the fire continued for several hours. The larger propane storage tanks remained intact and did not BLEVE⁴.
3. Amerigas, Intercourse PA, December 29, 2003. This facility was similar to the proposed Wenzel Oil facility in Candia, and it also had a cylinder maintenance building, an extensive inventory of propane cylinders, a 10,000 gallon aboveground diesel fuel tank and a 1,000 gallon aboveground gasoline tank. First responders found a major explosion at the cylinder maintenance building and that it was fully involved by fire. Filled cylinders stored near the cylinder maintenance building were covered with debris and could not be cooled with water spray, and released propane which fed the fire. Fire department response limited by the lack of a piped water supply, with water provided by tanker shuttle. The 3 propane storage tanks did not BLEVE⁵.
4. Sunrise Propane, Toronto, Ont. Canada. August 10, 2008. A propane trailer truck was being used to fill smaller propane trucks. The plant did not have a permit for this operation. Significant fines were levied following an extensive investigations⁶.
5. Atlas Foundry, Tacoma WA, October 2, 2007. An 8,000 propane trailer leaked propane which caused an explosion. The truck driver was reported to be attempting to repair the unloading hose assembly prior to the accident. Plant storage tanks were not involved⁷.

³ Herrig Brothers Farm Propane Tank Explosion, 06/23/1999, U. S. Chemical Safety Board

⁴ Telephone call with the Administrator of the New Mexico Propane Board

⁵ Propane Explosion: A Case Study, 03/01/2005, BY ERIC G. BACHMAN

⁶ Wikipedia, and other sources

⁷ Multiple sources

Appendix A.2

Resume of

THEODORE C. LEMOFF

Current Position: Engineering Consultant

Education B.E. (Chemical Engineering), City College of New York,
New York, NY, 1967
M.B.A. (Business Administration), Xavier University,
Cincinnati, OH, 1979

Certifications Registered Professional Engineer, Florida, Massachusetts,
and Texas

Experience

2010 – Present Principal, TLemoff Engineering.

Code consultation: Provide opinions on the applicability of gas code provisions in specific cases. Work includes review of history of code text to identify the intent of code provisions, providing verbal and written explanations, and follow-up with officials and other parties as required. Assist propane companies in obtaining local approval for new propane storage facilities.

Code expert in legal cases: Provide written explanation of the intent of code requirements, when cited by other parties. Incident site visits to determine code compliance or non-compliance and opinion as the relevance thereof. Review depositions for accuracy of code related statements. Provide testimony at depositions or trials as needed.

Product support: Assist manufacturers with product specific code requirements, and propane industry practices. Assist with liaison with approval laboratories. Work with local officials on product acceptance.

Seminars: Presented talks and seminars on NFPA 54 and NFPA 58 in the United States, Santa Cruz, Bolivia, Dubai, United Arab Emirates and Doha, Qatar.

1985 - 2010 National Fire Protection Association, Quincy, MA

Principal Gases Engineer

Staff liaison to all gases committees administering LP-Gas, Fuel Gas, and Liquid Natural Gas, and Ovens and Furnaces committee. Duties in addition to the administration of the standards making process include information interpretations as requested, speaking engagements and technical advice to NFPA books, films and other products.

NFPA representative to technical committees of the American Gas Association, National Propane Gas Association, and Compressed Gas Association, and the U. S. Department of Transportation Pipeline Advisory Committee. Voting member of the Uniform Plumbing Code and Uniform Mechanical Code committees.

Developed and maintained formal training programs on NFPA 58, Liquefied Petroleum Gas Code and NFPA 54, National Fuel Gas Code. Seminars presented throughout the United States.

1980 - 1985 Badger Engineers, Inc., Cambridge, MA and The Hague, Holland

Senior Project Engineer

Various assignments in the Cambridge, MA and the Hague, Holland offices covering the full range of project engineering activities including coordination, design, flow diagrams, equipment bid evaluation and selection.

1978 - 1980 Table Talk Pies, Division of Squibb Corporation, Worcester, Ma

Plant Engineer

Responsible for all engineering and maintenance for the bakery, freezer warehouse, distribution centers, and truck fleet.

1973 - 1978 Sun Chemical Corporation, Staten Island, NY and Cincinnati, OH

Engineering Manager

Responsible for all fire protection engineering and maintenance for the manufacturing facilities and associated offices and laboratories.

1967 - 1973 The Proctor and Gamble Company. Cincinnati, OH

Process Engineer

Broad range of assignments in detergents R&D.

Memberships and Affiliations

NFPA Technical Committee on National Fuel Gas Code (NFPA 54)
NFPA Technical Committee on Liquefied Petroleum Gases (NFPA 58)
UL Standards Technical Panel 125, Valves and Safety Relief Valves for Anhydrous Ammonia and LP-Gas, Member
American Institute of Chemical Engineers, Member
Society of Fire Protection Engineers, Member
National Fire Protection Association, Member
National Propane Gas Association, Member
ASTM and ASTM F17 Committee on Plastic Piping Systems
Barbados National Standards Committee on Propane

Publications

Editor, Liquefied Petroleum Gases Handbook, 8 editions
Editor, National Fuel Gas Code Handbook, 6 editions
Co Author, NFPA Pocket Guide to Fuel Gas Storage and Use, 2004
Risk analysis based LNG facility siting standard in NFPA 59A,
Journal of Loss Prevention in the Process Industries 22(6) · November 2009
Co Author, Fire Safety Analysis Manual for LP-Gas Storage Facilities, 2011,
NFPA and National Propane Gas Association
Co Author, Thinking about LNG?, Mining magazine, May 2019

Patent

Spray-Dried Detergent Composition, US # 3,801,511 (Assigned to the Proctor and Gamble Company)

Awards

Howard Card Safety Award, New Jersey Propane Gas Association, 2010
LP Gas Hall of Fame, 2017

January 2024



William F. Curley, Jr. Associates

Licensed and Certified Real Estate Appraisers

982A Boston Post Road
Marlborough, MA 01752

July 1, 2014

Tel: (508) 481-3124
Fax: (508) 481-6519

Mr. Bruce Montague
Turner Heating Co., Inc.
60 Shumway Street
Amherst, MA 01002

Dear Mr. Montague:

According to a recent *Sentinel* article, neighborhood residents have concerns that the propane distribution facility described in your Special Permit application will create an economic obsolescence for residences in proximity to 1066 Federal Street, Belchertown, MA. Economic obsolescence is defined in *Real Estate Terminology* (Ballinger Publishing, 1984, Page 87) as:

"Impairment of desirability or useful life arising from factors external to the property such as economic forces or environmental changes which affect supply demand relationships in the market. The loss in use and value of a property arising from the factors of economic obsolescence is to be distinguished from loss in value from physical deterioration and functional obsolescence, both of which are inherent in the property."

As a result of this concern, I was engaged to conduct market research to determine whether the proposed facility is likely to cause diminution in neighborhood real estate values. In the preparation of my study, I visited the site and the neighborhood and reviewed related documents including: The Zoning Board of Appeals Special Project Narrative prepared by Web Engineering Associates, Inc., The Town of Belchertown Zoning By-Laws and By-Law Attachments, timely neighborhood sales data, timely regional sales data, and The Bell Chart, an appraisal guide which identifies categories of detrimental conditions and describes appropriate methodology for determining their potential financial impact.

Your property is located on the eastern side of Route 9 at its intersection with North Street and is located in a B-2 Zoning District. In addition to a convenience store this property is now improved with a gasoline station and bulk oil storage and distribution facility which are pre-

existing, non-conforming uses. At present, some neighbors can view the existing fuel dispensing, fuel storage, and fuel dispensing operation from their residences and other neighbors cannot. Those who cannot are probably aware that fuel has been and is now being dispensed, stored, and distributed from the site. The proposed propane distribution facility is an extension of this non-conforming use and will consist of two 30,000 gallon ASME storage vessels which will be buried or completely covered with soil. The proposed facility's above ground appurtenances will be protected by redundant fail-safe systems. The project will be screened from view, wooded areas where visibility from the public could be an issue will be maintained, and lighting will not impact abutting property.

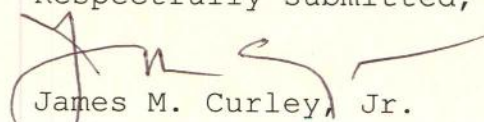
According to The Bell Chart (provided as an exhibit), the impact of detrimental conditions on property values is an empirical question that requires the application of one or more of the three traditional approaches to value and which is benchmarked against a baseline value.

The appraiser identified timely regional sales of single family residences located in close proximity to fuel distribution facilities. Half of the sales were located directly across the street from existing facilities and had views of the fuel storage and dispensing operations. The other half had similar proximity but no direct view of very large fuel storage and dispensing facilities.

The appraiser compared the sales prices obtained for these properties with a baseline trend for community residences of identical building style and room, bedroom, and baths amenities. In all cases that sales prices of these parcels exceeded Multiple Listing Service averages for the community and in most cases the marketing period (Days on Market) was significantly less than the Multiple Listing Service averages for the community. This data is also provided as an exhibit.

Based upon my research, I found no evidence that the Surner Heating Propane Distribution Facility is likely to create an economic obsolescence resulting in loss in property value to neighborhood residences.

Respectfully submitted,



James M. Curley, Jr.
Commonwealth of Massachusetts
Certified General RE Appraiser
#3945

Exhibits:

The Bell Chart

Proximity Comparables

THE BELL CHART

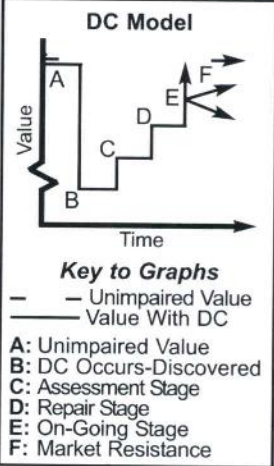
10 Categories of Detrimental Conditions

DC Class	Description	Damage Valuation	Damage Economics
I	General Conditions	<p>Baseline description and general market issues i.e., real estate, franchise, business, FF&E, goodwill, personal property, products, services, etc.</p>	<p>DCs may have a variety of impacts which, upon analysis, vary on a case-by-case basis.</p>
II	Transactional Conditions	<p>Unique sales or transfer issues, i.e., motivation, option, assemblage, distress, financing, bankruptcy, foreclosure, etc.</p>	
III	Distress & Sociological Conditions	<p>Human loss and tragedy issues i.e., crime, war, terrorism, accident, car crash, air disaster, train derailment, shipwreck, death, disability, illness, injury, etc.</p>	
IV	Legal Conditions	<p>Legal issues i.e., eminent domain, contract, tort, insurance claim, title, lot line, CC&R, lien, bond, lease, historic, moratorium, zoning, easement, etc.</p>	
V	External Conditions	<p>Neighborhood issues i.e., nuisance, proximity, noise, odor, hazard, power lines, airport, privacy, view, etc.</p>	
VI	Building & Manufacturing Conditions	<p>Construction, equipment and mechanical issues i.e., defects, engineering, repairs required, design, code, architecture, infestation, regulations, permits, etc.</p>	
VII	Site & Infrastructure Conditions	<p>Soils, geotechnical and right-of-way issues i.e., drainage, grading, fill, cracking, subsidence, slides, roads, corrosive soils, compaction, groundwater, utilities, etc.</p>	
VIII	Environmental & Biomedical Conditions	<p>Contamination, health and toxicity issues i.e., spills, haz-mat, asbestos (1979), lead paint (1978), mold, radioactive, metals, solvents, biological, hydrocarbons, plague, epidemic, etc.</p>	
IX	Conservation Conditions	<p>Cultural and natural resource issues i.e., habitat, endangered species, natural and cultural resources, archeological, shoreland, wetland, overpopulation, etc.</p>	
X	Natural & Climate Conditions	<p>Natural disaster and weather issues i.e., flood, hurricane, typhoon, wildfire, seismic, volcano, tornado, global warming, tsunamis, famine, drought, storms, etc.</p>	

Detrimental Conditions (DC's) are issues that *potentially* have a financial impact. DCs may fall along a continuum ranging from no economic impact to a complete loss of value, or even a liability. If a question of value arises, a Detrimental Condition (DC) analysis is required. The starting point for such an analysis is the DC Matrix, which illustrates the array of potentially relevant issues. All nine

	Assessment	Repair	Ongoing
Cost	Assessment Costs & Responsibility	Repair Costs & Responsibility	Ongoing Costs & Responsibility
Use	Use Impacts While Assessed	Use Impacts While Repaired	Impact on Highest & Best Use
Risk	Uncertainty Factor	Project Incentive	Market Resistance

elements of the DC Matrix should be considered. This can yield a variety of valuation patterns based upon the inclusion, exclusion and timing of each element, as reflected in the DC Model.



Damages are benchmarked against the *Baseline Value*. In determining the impact on value, it is critical that a distinction be made between the DC and unrelated issues. For example, market conditions may be responsible for a change in value that is unrelated to the condition being studied.

The impact of DCs on property values is ultimately an empirical question that requires the application of one or more of the three traditional approaches to value:

1. The Sales Comparison Approach utilizing market data with and without the DC.
2. The Income Capitalization Approach utilizing income and risk factors with and without the DC.
3. The Cost Approach utilizing data with and without the losses associated with a DC.

The DC Matrix, coupled with the three approaches to value, provides the framework for the analysis of DCs.

COMPARABLE PROXIMITY COMPARABLE #1

252 NORTH LIBERTY STREET, BELCHERTOWN, MA

LOCATED ACROSS THE STREET FROM SUBURBAN PROPANE FACILITY IN BELCHERTOWN, MA

SALES PRICE: \$208,000.00

DAYS ON MARKET: 41

AVERAGE MLS SALES PRICE OF 6 ROOM 3 BEDROOM 1BATH RANCHES PAST 24 MONTHS: \$162,214

AVERAGE DAYS ON MARKET: 70.43

NO APPARENT DIMINUTION



252 N Liberty St, Belchertown, MA 01007, USA

Google earth

Google earth

feet
meters





MLS # 71486466 - Sold
Single Family - Detached

252 N Liberty St
Belchertown, MA 01007-9227
Hampshire County
Style: Ranch
Color: Lt Green
Grade School: Swift River
Middle School: Chestnut Hill
High School: BHS
Handicap Access/Features: No
Directions: Off N Washington St

List Price: \$220,000
Sale Price: \$208,000

Total Rooms: 6
Bedrooms: 3
Bathrooms: 1 of 0h
Master Bath: No
Fireplaces: 0

Remarks

This appealing, spacious ranch has been meticulously cared for and is ready for a new family! Newer features include roof, siding, windows, doors, electrical, flooring, and driveway. The modern kitchen is open to the large dining room and has open stairway leading to extra living area in basement. Sliding glass doors lead to private deck, pool and patio on over an acre lot with shed. Easy access to Belchertown center and highway.

Property Information

Approx. Living Area: 1701 sq. ft. Approx. Acres: 1.14 (49658 sq. ft.)
Living Area Includes: Heat Zones: 1 Forced Air, Oil
Living Area Source: Public Record Cool Zones: 1 Central Air
Living Area Disclosures: Garage Spaces: 1 Attached, Garage Door Opener, Storage, Side Entry
Disclosures: Pool does not have filter. Condenser for Central Air disconnected. Parking Spaces: 4 Off-Street, Paved Driveway
Approx. Street Frontage:

Room Levels, Dimensions and Features

Room	Level	Size	Features
Living Room:	1		Ceiling Fan(s), Flooring - Laminate, Window(s) - Picture
Dining Room:	1		Flooring - Stone/Ceramic Tile, Open Floor Plan
Kitchen:	1		Flooring - Stone/Ceramic Tile
Master Bedroom:	1		Ceiling Fan(s), Flooring - Laminate
Bedroom 2:	1		Ceiling Fan(s), Flooring - Laminate
Bedroom 3:	1		Ceiling Fan(s), Flooring - Laminate
Bath 1:	1		Flooring - Vinyl
Laundry:	B		Dryer Hookup - Electric, Washer Hookup
Game Room:	B		Recessed Lighting

Features

Appliances: Range, Dishwasher, Refrigerator
Area Amenities: Public Transportation, Shopping, Swimming Pool, Tennis Court, Park, Walk/Jog Trails, Stables, Golf Course, Medical Facility, Laundromat, Bike Path, Conservation Area, House of Worship, Public School
Basement: Yes Full, Partially Finished, Interior Access, Bulkhead, Concrete Floor
Beach: No
Construction: Frame
Electric: Circuit Breakers
Energy Features: Insulated Windows, Insulated Doors
Exterior: Vinyl
Exterior Features: Porch, Deck, Pool - Above Ground, Storage Shed
Flooring: Tile, Vinyl, Laminate
Foundation Size: -
Foundation Description: Poured Concrete
Hot Water: Electric
Insulation: Full, Fiberglass
Lot Description: Paved Drive, Cleared, Level
Road Type: Public, Paved, Publicly Maint.
Roof Material: Asphalt/Fiberglass Shingles
Sewer Utilities: Private Sewerage - Title 5: Not Done
Utility Connections: for Electric Range, for Electric Dryer
Water Utilities: Private Water
Waterfront: No
Water View: No, --

Other Property Info

Adult Community: No
Disclosure Declaration: Yes
Exclusions:
Facing Direction: East
Home Own Assn: No
Lead Paint: Unknown
UFFI: No Warranty Features: No
Year Built: 1977 Source: Public Record
Year Built Description: Actual
Year Round: Yes
Short Sale w/Lndr.App.Reg: No
Lender Owned: No

Tax Information

Pin #: M:268 L:35
Assessed: \$208,500
Tax: \$3453 Tax Year: 2012
Book: 9135 Page: 354
Cert:
Zoning Code: OA4
Map: Block: Lot:

Office/Agent Information

Listing Office: RE/MAX Swift River Valley (413) 345-6650
Listing Agent: Sharon I. Riley (413) 695-3178
Team Member:
Sale Office: ERA M Connie Laplante (413) 536-9111
Sale Agent: Laura Stamborski (413) 885-6156
Listing Agreement Type: Exclusive Right to Sell
Entry Only: No
Showing: Sub-Agent: Sub-Agency Relationship Not Offered
Showing: Buyer-Agent: Call List Agent, Lock Box, Appointment Required
Showing: Facilitator: Call List Agent, Lock Box, Appointment Required
Special Showing Instructions:

Compensation

Sub-Agent: Not Offered
Buyer Agent: 2.5
Facilitator: 2.5
Compensation Based On: --

Market Information

Listing Date: 2/26/2013
Days on Market: Property has been on the market for a total of 41 day(s)
Expiration Date:
Original Price: \$220,000
Off Market Date: 4/8/2013
Sale Date: 5/31/2013
Sale Price: \$208,000
Offer Date: 4/8/2013

Listing Market Time: MLS# has been on for 41 day(s)
Office Market Time: Office has listed this property for 41 day(s)
Cash Paid for Upgrades:
Seller Concessions at Closing:
Financing: Other



2013 00012556

Bk: 11332Pg: 219 Page: 1 of 3

Recorded: 05/31/2013 10:34 AM

MASSACHUSETTS EXCISE TAX
Hampshire District ROD #13 001
Date: 05/31/2013 10:34 AM
ctrl# 029569 08010 Doc# 00012556
Fee: \$948.48 Cons: \$208,000.00

WARRANTY DEED

I, JOANNE MARIE LEAL, an unmarried person, of Belchertown, Massachusetts,

in consideration of TWO HUNDRED EIGHT THOUSAND and 00/100 (\$208,000.00)
DOLLARS

grant to NATHAN R. MORGAN and ELYSSA F. MORGAN, husband and wife, as
tenants by the entirety, of 84 Laclede Avenue, Chicopee, MA

with warranty covenants

PREMISES: 252 North Liberty Street, Belchertown, MA 01007

The land in Belchertown, Hampshire County, Massachusetts bounded and described as
follows:

Beginning at a point at the Northeasterly corner of the parcel herein described, said
point being also located S. 7° 02' 08" E. a distance of One Hundred Sixty and 00/100
(160.00) feet from a concrete bound at the southeasterly corner of land now or formerly
of Anna R. Sullivan, Thomas F. Sullivan, Kathleen M. Sullivan and Mary Rose Sullivan,
said point being also on the westerly line of Three Rivers Road in the Town of
Belchertown, Hampshire County, Massachusetts, and running thence;

S. 07° 02' 08" E. along the westerly line of Three Rivers Road a distance of Thirty-Four
and 15/100 (34.15) feet to a concrete bound; thence running

S. 03° 31' 07" W. along the westerly line of Three Rivers Road a distance of One
Hundred Twenty-eight and 30/100 (128.30) feet to a point of curvature at the
intersection of the proposed layout of Spruce Drive; thence running along a curve to the
right of radius Thirty and 00/100 (30.00) feet, an arc length of Forty-three and 30/100
(43.30) feet to a point; thence running

S. 86° 13' 17" W. a distance of Two Hundred Sixty and 00/100 (260.00) feet to a point, the last two courses being measured along the proposed northerly line of Spruce Drive thence running

N. 06° 33' 55" W. a distance of One Hundred Forty-Three and 45/100 (143.45) feet to a point; thence running

N. 78° 07' 24" E. a distance of Three Hundred Fourteen and 22/100 (314.22) feet to the westerly line of Three Rivers Road at the point of beginning.

Containing 49,640 square feet, more or less.

Meaning and intending to convey Lot #6 (six) on a plan of land entitled "Belchertown Plan of Lots for Roland H. and Cecile M. Brochu, Pharmer Engineering Corporation," Holyoke, Massachusetts dated August 24, 1972 and recorded in Hampshire County Registry of Deeds in Book of Plans 108, Pages 72-73.

Subject to an easement to New England Telephone and Telegraph Company and Massachusetts Electric Company recorded as aforesaid in Book 2005, Page 177.

Being the same premises conveyed to Joanne Marie Leal by deed recorded as aforesaid in Book 9135, Page 354.

Executed as a sealed instrument this 31st day of May, 2013.

Joanne Marie Leal
JOANNE MARIE LEAL

Joseph R. White

Commonwealth of Massachusetts

Hampden, ss.

On this 31st day of May, 2013, before me, the undersigned notary public, personally appeared JOANNE MARIE LEAL, proved to me through satisfactory evidence of identification, which was Mass Driver Lic, to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose, and further acknowledged that she executed the same as her free act and deed.



Joseph R. White

NOTARY PUBLIC

My Commission Expires: 12/21/2014

ATTEST: HAMPSHIRE, Mary Olberding, REGISTER
MARY OLBERDING

Unofficial Property Record Card - Belchertown, MA

General Property Data

Parcel ID **268-35**
Prior Parcel ID **16 / 98/D-**
Property Owner **NOT AVAILABLE**

Account Number **0**

Mailing Address

Property Location **252 NORTH LIBERTY ST**
Property Use **ONE FAM**
Most Recent Sale Date **5/31/2013**
Legal Reference **11332-219**
Grantor **LEAL JOANNE MARIE,**

City

Mailing State Zip

Sale Price **208,000**

ParcelZoning

Land Area **1.140 acres**

Current Property Assessment

Card 1 Value Building Value **122,200**

Xtra Features Value **3,600**

Land Value **72,400**

Total Value **198,200**

Building Description

Building Style **RANCH**
of Living Units **1**
Year Built **1977**
Building Grade **AVERAGE**
Building Condition **Average**
Finished Area (SF) **1701.00001**
Number Rooms **6**
of 3/4 Baths **0**

Foundation Type **CONCRETE**
Frame Type **WOOD**
Roof Structure **GABLE**
Roof Cover **ASPHALT SH**
Siding **VINYL**
Interior Walls **DRYWALL**
of Bedrooms **3**
of 1/2 Baths **0**

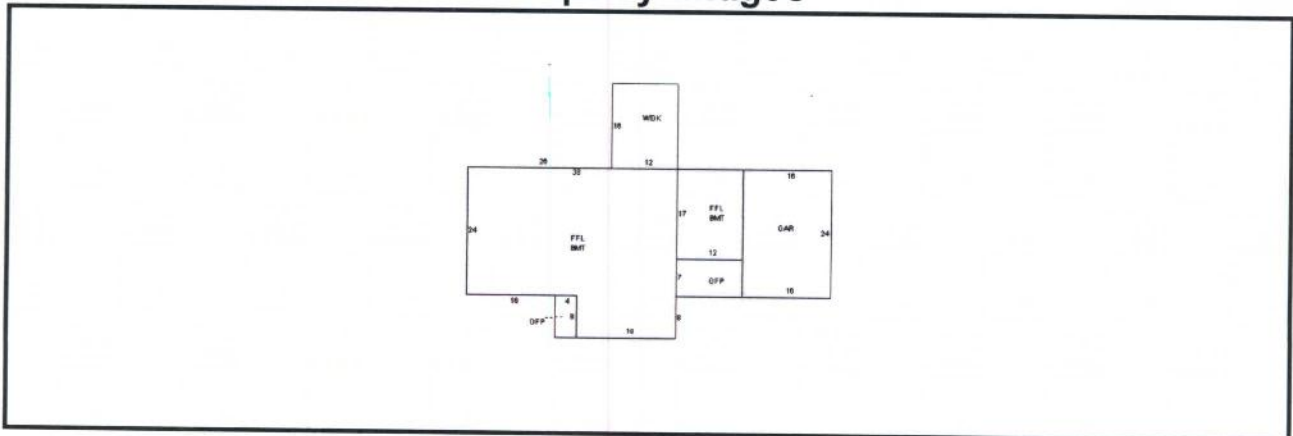
Flooring Type **HARDWOOD**
Basement Floor **N/A**
Heating Type **FORCED H/A**
Heating Fuel **OIL**
Air Conditioning **0%**
of Bsmt Garages **0**
of Full Baths **1**
of Other Fixtures **0**

Legal Description

Narrative Description of Property

This property contains 1.140 acres of land mainly classified as ONE FAM with a(n) RANCH style building, built about 1977, having VINYL exterior and ASPHALT SH roof cover, with 1 unit(s), 6 room(s), 3 bedroom(s), 1 bath(s), 0 half bath(s).

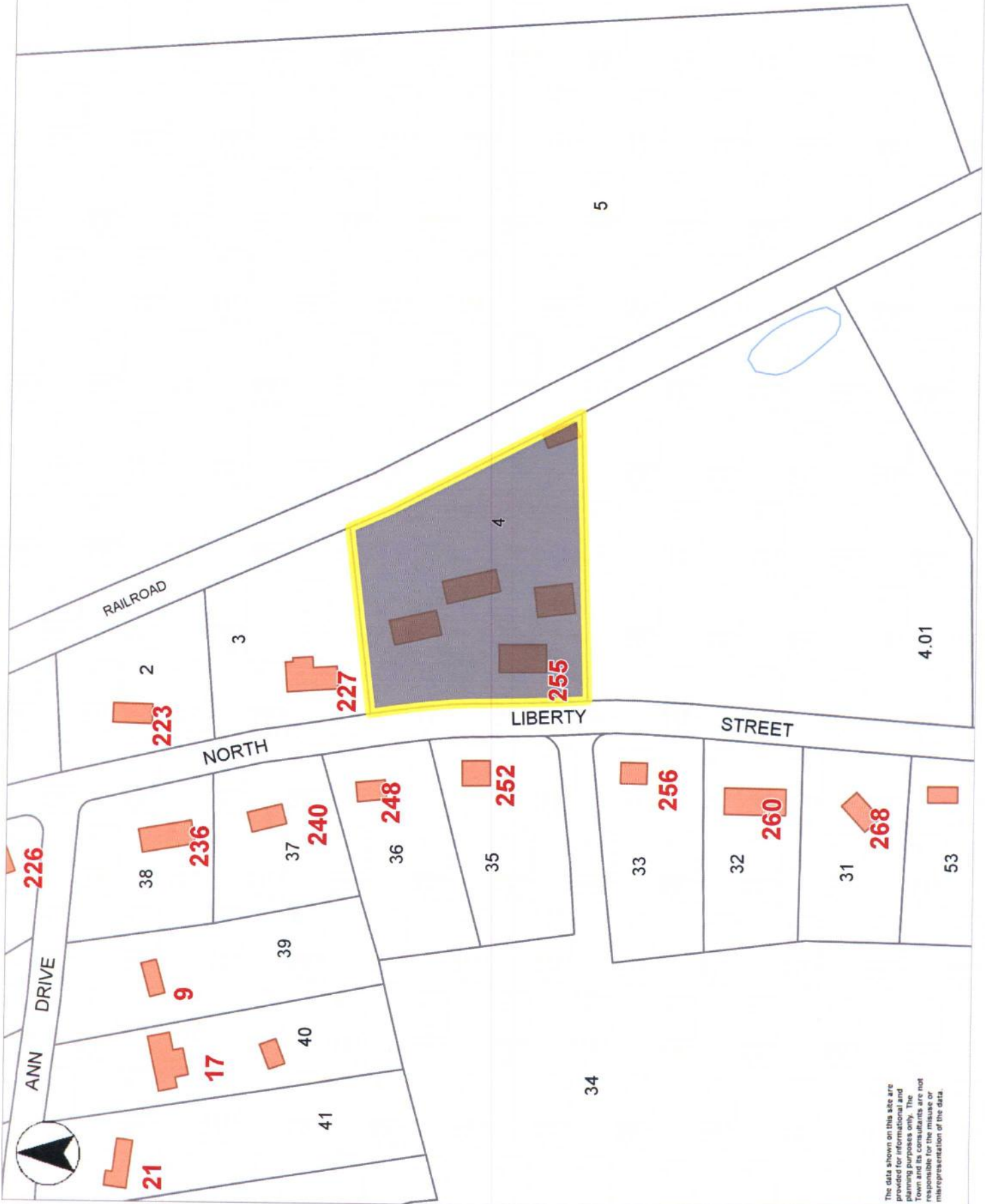
Property Images



Disclaimer: This information is believed to be correct but is subject to change and is not warranted.



- Buildings
- Misc Water
- Open Water
- Miscellaneous Lines
- Hooks
- ROW
- Utility
- Priv Rd RW
- Parcels
- MA Highways
- Interstate
- US Highway
- State Highway
- Town Boundary
- Abutting Towns
- Abutting Towns Solid
- EOT Roads



The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.



Property Type(s): SF

Status: SLD

Timeframe: TODAY -24 MONTHS

Towns: Belchertown, MA

Advanced Criteria: ■ Number of Total Baths=1 ■ Number of Rooms=6 ■ Number of Bedrooms=3

7 Listings

Single Family Listings

MLS #	Status	Address	Town	Description	DOM	List Price	Sale Price
71491053	SLD	158 Stebbins St	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	78	\$74,000	\$55,000
71449106	SLD	88 Howard Street	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	154	\$150,000	\$150,000
71416370	SLD	181 Mill Valley Road	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	62	\$164,900	\$160,000
71599212	SLD	454 Federal Street	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	78	\$167,500	\$161,500
71604562	SLD	30 Metacomet Street	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	30	\$199,900	\$195,000
71412710	SLD	15 Dressel Ave	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	50	\$209,900	\$206,000
71486466	SLD	252 N Liberty St	Belchertown, MA	6 room, 3 bed, 1f 0h bath Ranch	41	\$220,000	\$208,000

Single Family Listings: 7 Avg. Liv.Area SqFt: 1,218.14 Avg. List\$: \$169,457 Avg. List\$/SqFt: \$139 Avg. DOM: 70.43

Avg. Sale\$: \$162,214 Avg. Sale\$/SqFt: \$134

The information in this listing was gathered from third party sources including the seller and public records. MLS Property Information Network and its subscribers disclaim any and all representations or warranties as to the accuracy of this information. Content ©2014 MLS Property Information Network, Inc.

FUEL DISTRIBUTION FACILITY PROXIMITY COMPARABLE #2

345 CHAPMAN STREET, GREENFIELD, MA

LOCATED ACROSS THE STREET FROM SUBURBAN PROPANE FACILITY IN GREENFIELD, MA

SALES PRICE: \$170,000.00

DAYS ON MARKET: 168

AVERAGE MLS SALES PRICE OF 5 ROOM 2 BEDROOM 1 BATH RANCHES PAST 24 MONTHS: \$162,214

AVERAGE DAYS ON MARKET: 70.43

NO APPARENT DIMINUTION



345 Chapman St, Greenfield, MA, 01301, USA

© 2014 Google

Google earth

Google earth

feet
meters



300
100





MLS # 71489713 - Sold
Single Family - Detached

345 Chapman St
Greenfield, MA 01301
Franklin County
Style: Ranch
Color: yellow
Grade School: Four Corners
Middle School: Grfld
High School: Grfld
Handicap Access/Features: No
Directions: From silver st to north end of Chapman st to house on left

List Price: \$179,000
Sale Price: \$170,000

Total Rooms: 5
Bedrooms: 2
Bathrooms: 1 f 0h
Master Bath: No
Fireplaces: 0

Remarks

Totally remodeled ranch house on .4 acres and neat as a pin!! Features include central A/C, new maple hard wood and ceramic tile floors, enclosed heated porch, attached one car garage with additional car port. All upgrades completed in the last 3/4 years. Newer Buderus oil heat with 3 zones and hot water super storage system. Very large in town back yard with patio and deck ideal for entertaining or just relax and enjoy.

Property Information

Approx. Living Area: 1228 sq. ft. Approx. Acres: 0.4 (17562 sq. ft.)
Living Area Includes: Heat Zones: 3 Hot Water Baseboard, Oil
Living Area Source: Public Record Cool Zones: 1 Central Air
Living Area Disclosures: Garage Spaces: 1 Attached, Carport, Garage Door Opener, Side Entry
Disclosures: Washer and Dryer are nego. Roof is 6 years old. Parking Spaces: 3 Off-Street, Paved Driveway
Approx. Street Frontage: 130 ft

Room Levels, Dimensions and Features

Room	Level	Size	Features
Living Room:	1	--	--
Dining Room:	1	--	--
Kitchen:	1	--	--
Master Bedroom:	1	--	--
Bedroom 2:	1	--	--
Laundry:	B	--	--

Features

Appliances: Range, Dishwasher, Refrigerator
Area Amenities: Public Transportation, Shopping, Swimming Pool, Tennis Court, Golf Course, Medical Facility, Bike Path, Highway Access, House of Worship, Private School, Public School
Basement: Yes Full, Partially Finished, Interior Access, Bulkhead, Sump Pump, Concrete Floor
Beach: No
Construction: Frame
Electric: 220 Volts, Circuit Breakers, 100 Amps
Energy Features: Insulated Windows, Insulated Doors
Exterior: Vinyl
Exterior Features: Porch - Enclosed, Deck, Patio, Storage Shed, Satellite Dish
Flooring: Wood, Tile, Hardwood
Foundation Size: xxxx
Foundation Description: Poured Concrete
Hot Water: Oil, Tankless, Separate Booster
Insulation: Unknown
Interior Features: Central Vacuum, Cable Available
Lot Description: Paved Drive, Level
Road Type: Public, Paved, Publicly Maint.
Roof Material: Asphalt/Fiberglass Shingles
Sewer Utilities: City/Town Sewer
Utility Connections: for Electric Range, for Electric Oven, for Electric Dryer, Washer Hookup
Water Utilities: City/Town Water
Waterfront: No
Water View: No, --

Other Property Info

Disclosure Declaration: Yes
Exclusions:
Facing Direction: West
Home Own Assn:
Lead Paint: Unknown
UFFI: Unknown Warranty Features:
Year Built: 1977 Source: Public Record
Year Built Description: Actual, Renovated Since
Year Round: Yes
Short Sale w/Lndr.App.Req: No
Lender Owned: No

Tax Information

Pin #:
Assessed: \$179,500
Tax: \$3412.3 Tax Year: 2012
Book: 6008 Page: 5
Cert:
Zoning Code: RA
Map: 0097 Block: 0013 Lot: 0

Office/Agent Information

Listing Office: Cohn & Company (413) 772-0105 Ext. 144
Listing Agent: Steven Schechterle (413) 522-4728
Team Member:
Sale Office: Geri Johnson & Assoc., REALTORS® (413) 863-9736 Ext. 20
Sale Agent: Geri Johnson (413) 522-7055
Listing Agreement Type: Exclusive Right to Sell
Entry Only: No
Showing: Sub-Agent: Sub-Agency Relationship Not Offered
Showing: Buyer-Agent: Call List Agent, Key in Office, Accompanied Showings, Appointment Required, Sign
Showing: Facilitator: --
Special Showing Instructions: 24 hour notice please

Compensation

Sub-Agent: Not Offered
Buyer Agent: 2
Facilitator: 0
Compensation Based On: --

Market Information

Listing Date: 3/5/2013
Days on Market: Property has been on the market for a total of 168 day(s)
Expiration Date:
Original Price: \$187,000
Off Market Date: 8/20/2013
Sale Date: 8/30/2013
Sale Price: \$170,000
Offer Date: 8/20/2013

Listing Market Time: MLS# has been on for 168 day(s)
Office Market Time: Office has listed this property for 168 day(s)
Cash Paid for Upgrades:
Seller Concessions at Closing:
Financing: Cash



Bk: 6434 Pg: 187 Franklin County
Page: 1 of 3 08/30/2013 02:17 PM

MASSACHUSETTS EXCISE TAX
Franklin District ROD #11 001
Date: 08/30/2013 02:17 PM
Ctrl# 012889 16512 Doc# 00010528
Fee: \$775.20 Cons: \$170,000.00

**AFFECTED PREMISES:
345 CHAPMAN STREET
GREENFIELD, MA**

I, TIFFANY Q. XIE

**IN CONSIDERATION OF ONE HUNDRED SEVENTY THOUSAND AND 00/100
(\$170,000.00) DOLLARS**

GRANT TO

JOYCE A. BARBER at 345 Chapman St., Greenfield, MA 01301

With Quitclaim Covenants, the land in Greenfield, Franklin County, Massachusetts,
bounded and described on attached **EXHIBIT A** and made part hereof.

No new boundaries are created by this conveyance.

WITNESS my hand and seal this 23rd day of August, 2013.

Thomas Le
Witness

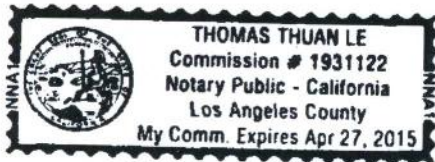
By [Signature]
Tiffany Xie

STATE OF CALIFORNIA

, ss.

August 23rd, 2013

Then personally appeared the above-named Tiffany Xie personally known to me or who proved through satisfactory evidence of identification to be the person signing above and who acknowledged the foregoing instrument to be her free act and deed on before me



Thomas Thuan Le
Notary Public

My commission expires: 4/27/15

EXHIBIT A

The land in Greenfield, Franklin County, Massachusetts, with the buildings thereon, bounded and described as follows:

Lots seven (7) and eight (8) situated on the east side of Chapman Street as depicted on plan of land on file with Franklin County Registry of Deeds known as the Maplewood Tract, Plan Book 1, Page 119.

Excepted from these premises is a strip of land twenty-five (25) feet in width running along the southerly line of said Lot 7 as conveyed by said Trustees to Ruth B. Patnode by deed dated December 13, 1973, recorded in said Registry of Deeds, Book 1376, Page 149. See also deed of said Patnode to said Trustees dated January 2, 1974, recorded in said Registry of Deeds, Book 1376, Page 150.

Meaning and intending to convey and hereby being and conveying the same premises conveyed to Tiffany Q Xie by deed recorded in the Franklin County Registry of Deeds in Book 6008 Page 5.

ATTEST: FRANKLIN, Scott A. Cote Register

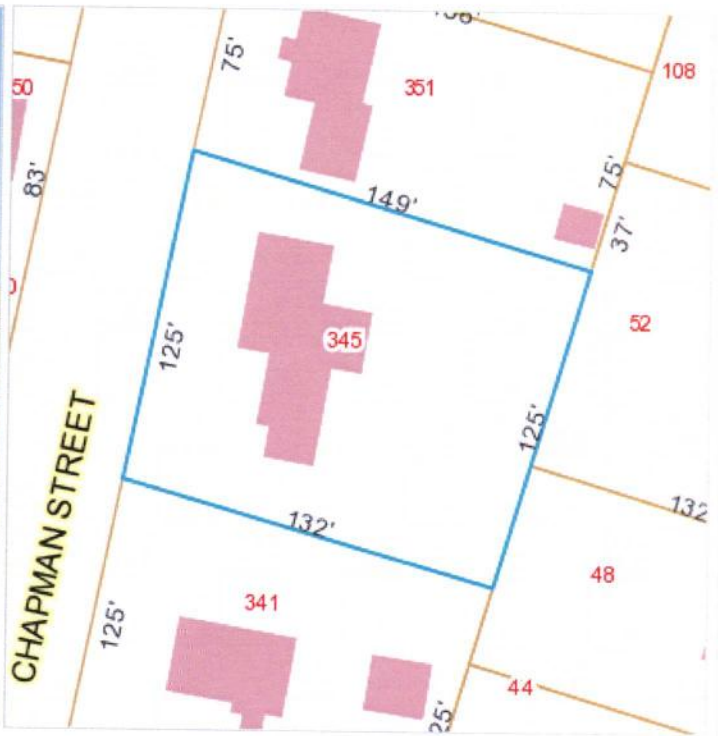


Town of Greenfield, Massachusetts
Property Record Card

Card 1 of 1

345 CHAPMAN ST

ID: 97-13 Book / Page: 6434-187



Owner: BARBER JOYCE A
Co-Owner:
Mailing Address: 345 CHAPMAN ST
GREENFIELD MA 01301

Assessment: Total: 170700
Building: 128500, Land: 39000, Yard Items: 3200

Sales History

Grantor	Legal Reference	Sale Date	Sale Price
XIE, TIFFANY Q	6434-187	8/30/2013	170000
HERZIG MILTON H,	6008-5	4/14/2011	170000
MAYBERRY	1505\35	6/1/1977	4500



MainStreetGIS, LLC
www.mainstreetgis.com

Land Information

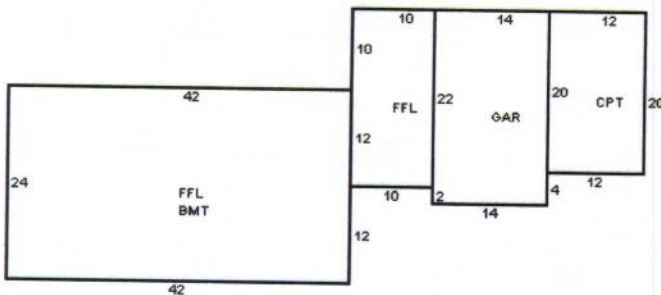
Land Area: 0.4 AC / 17562 SQ FT Zoning: URBAN RES
Land Use: 101 - ONE FAM
Neighborhood: EA - E AVG

Building Information

Units: 1
Year Built: 1977
Style: RANCH
Rooms: 5
Bedrooms: 2
Baths: 1
Half Baths: 0
Stories: 1
Heat Fuel: OIL
Heat Type: FORCED H/W
Roof Structure: GABLE
Roof Covering: ASPHALT SH
Kitchens: 1
Fireplaces: 0

Extra Feat. / Yard Items

Type	Area	Assessment
PATIO	20x24	2800
SHED/FR	8X10	400



Sub Areas

Type	Area
BASEMENT	1008
CARPORT	240
1ST FLOOR	1228
GARAGE	336

Greenfield, MA



Tax Map 097

Legend

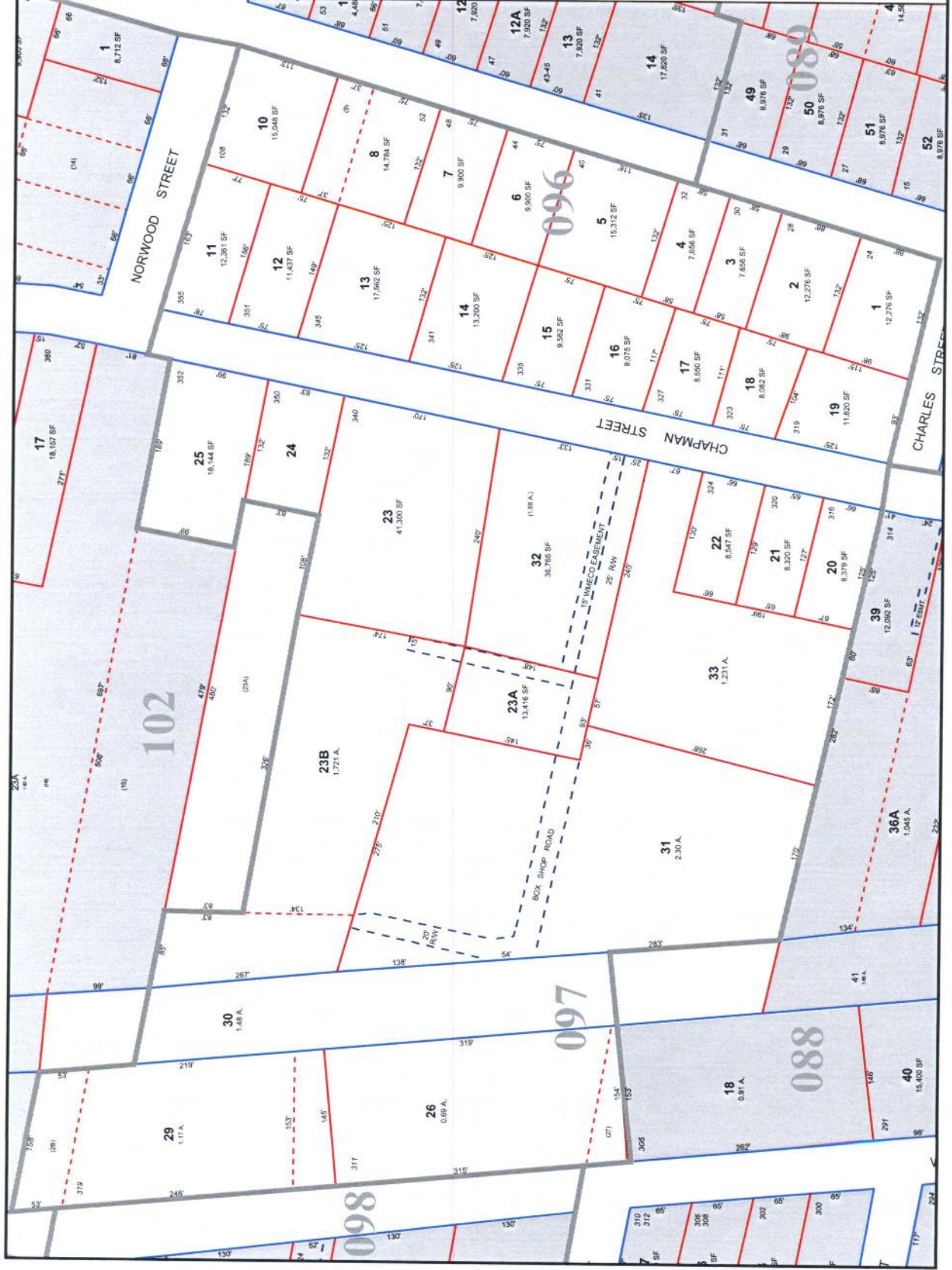
- Lot Line
- - - Former Lot Line
- - - Former ROW Line
- Lot Line / Edge of Water
- Right of Way Line
- - - Paper Street ROW
- Town Boundary
- Easement Line
- Map Sheet Edge
- 22** Map Lot #
- (22) Former Lot #
- 22 House Street #
- 2.2 A. or Area
- 22,222 SF (Acres or Square Feet)
- 0.22 Tax Map Sheet #

80 40 0 80 Feet

1 inch = 98 feet



Prepared by: Dept. of Planning & Development
Data Sources: Town of Greenfield & MassGIS
January 2014



Property Type(s): SF
Status: SLD
Timeframe: TODAY - 24 MONTHS
Towns: Greenfield, MA

Advanced Criteria: ■ Number of Total Baths=1 ■ Number of Rooms=5 ■ Number of Bedrooms=2 ■ Style =E

8 Listings

Single Family Listings

MLS #	Status	Address	Town	Description	DOM	List Price	Sale Price
71350454	SLD	222 Leyden Rd	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	139	\$87,000	\$87,000
71567523	SLD	22 Silver Place	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	71	\$99,900	\$92,000
71496549	SLD	218 Log Plain Rd	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	13	\$129,000	\$127,500
71498080	SLD	15 Prentice Avenue	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	29	\$157,500	\$147,600
71625659	SLD	7 Raingley Road	Greenfield, MA	5 room, 2 bed, 1f 0h bath Cape	47	\$162,000	\$158,000
71436298	SLD	92 Cottage St	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	64	\$174,000	\$164,000
71489713	SLD	345 Chapman St	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	168	\$179,000	\$170,000
71358195	SLD	217 Green River Rd	Greenfield, MA	5 room, 2 bed, 1f 0h bath Ranch	55	\$210,000	\$185,000

Single Family Listings: 8 Avg. Liv.Area SqFt: 1,110.88 Avg. List\$: \$149,800 Avg. List\$/SqFt: \$136 Avg. DOM: 73.25

Avg. Sale\$: \$141,388 Avg. Sale\$/SqFt: \$129

The information in this listing was gathered from third party sources including the seller and public records. MLS Property Information Network and its subscribers disclaim any and all representations or warranties as to the accuracy of this information. Content ©2014 MLS Property Information Network, Inc.

FUEL DISTRIBUTION FACILITY PROXIMITY COMPARABLE #3

142 GROVE STREET, NORTHHAMPTON, MA

LOCATED WITHIN 200' OF COLUMBIA GAS OF MASSACHUSETTS FACILITY IN NORTHHAMPTON, MA

SALES PRICE: \$192,100

DAYS ON MARKET: 26

AVERAGE MLS SALES PRICE OF 6 ROOM 3 BEDROOM 1BATH FARMHOUSES PAST 24 MONTHS: \$186,025

AVERAGE DAYS ON MARKET: 212.75

NO APPARENT DIMINUTION



142 Grove St, Northampton, MA 01060, USA

Google earth

Google earth

feet
meters





MLS # 71411548 - Sold
Single Family - Detached

142 Grove Street
Northampton, MA 01060
Hampshire County
Style: Farmhouse
Color: White
Grade School:
Middle School: JFK
High School: N'ton High
Handicap Access/Features: No
Directions: Route 66 to Grove St. or Route 10 To Earle St. to Grove Street

List Price: \$195,000
Sale Price: \$192,100

Total Rooms: 6
Bedrooms: 3
Bathrooms: 1f 0h
Master Bath: No
Fireplaces: 0

Remarks

This warm & cozy home is located on Hospital Hill and is surrounded by trees and plantings. Nicely maintained by owner and close to most things that matter yet feels very country. Looking for the right buyer to continue enjoying this homes location and wonderful ambiance.

Property Information

Approx. Living Area: 1113 sq. ft. Approx. Acres: 0.35 (15246 sq. ft.) Garage Spaces: 0 --
Living Area Includes: Heat Zones: 1 Forced Air, Oil Parking Spaces: 2 Off-Street, Stone/Gravel
Living Area Source: Public Record Cool Zones: 0 None Approx. Street Frontage: 100 ft
Living Area Disclosures:
Disclosures: Lead paint possible. In a very wet spring some minor water on 1 side of basement-flows to sump.

Room Levels, Dimensions and Features

Room	Level	Size	Features
Living Room:	1		Flooring - Wood
Kitchen:	1		Flooring - Vinyl, Breakfast Bar / Nook, Country Kitchen, Wainscoting
Master Bedroom:	1		Closet, Flooring - Wood
Bedroom 2:	2		Skylight, Closet, Flooring - Wood
Bedroom 3:	2		Closet, Flooring - Wood
Bath 1:	1		Bathroom - Full, Flooring - Vinyl
Laundry:	B		--

Features

Area Amenities: Public Transportation, Shopping, Tennis Court, Walk/Jog Trails, Stables, Golf Course, Medical Facility, Laundromat, Bike Path, Conservation Area
Basement: Yes Full, Interior Access, Bulkhead, Sump Pump, Concrete Floor
Beach: No
Construction: Frame
Electric: Circuit Breakers, 100 Amps
Energy Features: Storm Windows, Storm Doors, Attic Vent Elec.
Exterior: Aluminum, Vinyl
Exterior Features: Porch - Enclosed, Porch - Screened, Screens, Fenced Yard
Flooring: Wood, Vinyl
Foundation Size: 20x40
Foundation Description: Poured Concrete, Fieldstone
Hot Water: Natural Gas
Insulation: Partial, Mixed
Interior Features: Cable Available
Lot Description: Wooded, Level
Road Type: Public, Publicly Maint., Sidewalk
Roof Material: Asphalt/Fiberglass Shingles
Sewer Utilities: City/Town Sewer
Utility Connections: for Gas Range, for Gas Dryer, Washer Hookup
Water Utilities: City/Town Water
Waterfront: No
Water View: No, --

Other Property Info

Disclosure Declaration: Yes
Exclusions:
Facing Direction: South
Green Certified: No
Home Own Assn: No
Lead Paint: Unknown
UFFI: No Warranty Features:
Year Built: 1900 Source: Public Record
Year Built Description: Approximate
Year Round: Yes
Short Sale w/Lndr.App.Reg: No
Lender Owned: No

Tax Information

Pin #:
Assessed: \$198,700
Tax: \$2652.65 Tax Year: 2012
Book: 6560 Page: 258
Cert:
Zoning Code: URB
Map: Block: Lot:

Office/Agent Information

Listing Office: Jones Group REALTORS® (413) 585-0400
Listing Agent: Larry Costello (413) 584-5526
Team Member:
Sale Office: William Raveis R.E. & Home Services (413) 565-2111
Sale Agent: Suzanne White - William McCarry G (413) 726-9315
Listing Agreement Type: Exclusive Right to Sell
Entry Only: No
Showing: Sub-Agent: Sub-Agency Relationship Not Offered
Showing: Buyer-Agent: Call List Agent
Showing: Facilitator: Call List Agent
Special Showing Instructions: 24 Hour Notice - Dogs & Children - Lockbox

Compensation

Sub-Agent: Not Offered
Buyer Agent: 2.0
Facilitator: 2.0
Compensation Based On: --

Market Information

Listing Date: 7/19/2012
Days on Market: Property has been on the market for a total of 26 day(s)
Expiration Date:
Original Price: \$195,000
Off Market Date: 8/14/2012
Sale Date: 9/28/2012
Sale Price: \$192,100
Offer Date: 7/23/2012 10:26:00 AM
Listing Market Time: MLS# has been on for 26 day(s)
Office Market Time: Office has listed this property for 26 day(s)
Cash Paid for Upgrades:
Seller Concessions at Closing: \$5,100
Financing: Conv. Fixed



2012 00023339

Bk: 11061Pg: 95 Page: 1 of 3
Recorded: 09/28/2012 11:49 AM

MASSACHUSETTS EXCISE TAX
Hampshire District ROD #13 001
Date: 09/28/2012 11:49 AM
ctrl# 028419 31000 Doc# 00023339
Fee: \$877.80 Cons: \$192,100.00

KNOW ALL PERSONS BY THESE PRESENTS

That I, ALISON A. MATTHEWS, being unmarried, of 142 Grove Street, Northampton, MA,

In consideration of One Hundred Ninety Two Thousand One Hundred and 00/100 (\$192,100.00) Dollars

Grant to KATIE A. KRONE, of 49 Orchard Street, Apt 3, Northampton, MA 01060


with QUITCLAIM COVENANTS

the land situated at 142 Grove Street, Northampton, Hampshire County, Massachusetts, and being more particularly bounded and described on Exhibit "A" attached hereto and made a part hereof.

Being the same premises conveyed to the grantor by deed of Daniel M. Talbot and Linda S. Talbot, dated March 1, 2002, recorded in the Hampshire County Registry of Deeds in Book 6560, Page 258.

Executed as a sealed instrument this 28th day of September, 2012.

Affected Premises: 142 Grove Street, Northampton

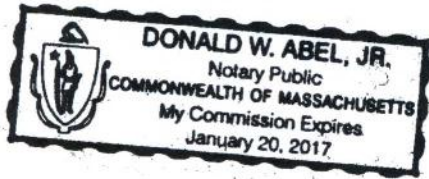
Witness 


ALISON A. MATTHEWS

COMMONWEALTH OF MASSACHUSETTS

HAMPSHIRE, ss

On this 28th day of September, 2012, before me, the undersigned notary public personally appeared Alison A. Matthews, proved to me through satisfactory evidence of identification which was personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it voluntarily for its stated purpose.



A handwritten signature in black ink, appearing to read "Donald W. Abel, Jr.", written over a horizontal line.

Donald W. Abel, Jr.
Notary Public
My commission expires: 1/20/2017

EXHIBIT A

The land with the buildings thereon situate in Northampton, Hampshire County, Massachusetts

Beginning at a masonry nail to be set on the southerly side of Grove Street, which masonry nail marks the Northwest corner of the parcel to be conveyed, thence running along Grove Street

N. 83° 18' 24" E. a distance of 75.00 feet more or less to an iron pipe to be set; thence turning and running along Parcel 2

S. 17° 07' 11" E. a distance of 181.41 feet more or less to an iron pipe to be set; thence turning and running along land now or formerly of Massachusetts Electric Company

S. 62° 05' 54" W. a distance of 84.08 feet more or less to an iron pipe found; thence turning and running along land now or formerly of Owen T. Greene

N. 14° 43' 06" W. a distance of 210.90 feet more or less to the place of beginning.

Containing 15,323 square feet of land, more or less.

For a more particular description see Parcel 1 on a plan of land entitled "Plan of Land in Northampton, Massachusetts Surveyed for Timothy R. Fennessey" dated May 17, 1988 prepared by Heritage Surveys, Bruce A. Coombs, R.L.S. and recorded in Hampshire County Registry of Deeds in Plan Book 154, Page 45.

Grove Street is also known as Grove Avenue,

ATTEST: HAMPSHIRE, Patricia A. Plaza REGISTER
PATRICIA A. PLAZA

[home](#)

[search for properties](#)

[meet the assessors](#)

[mission statement](#)

[links of interest](#)

City of Northampton, MA: Residential Property Record Card

[New Search](#) [Property Type Classification Code Reference](#) Card 1 of 1

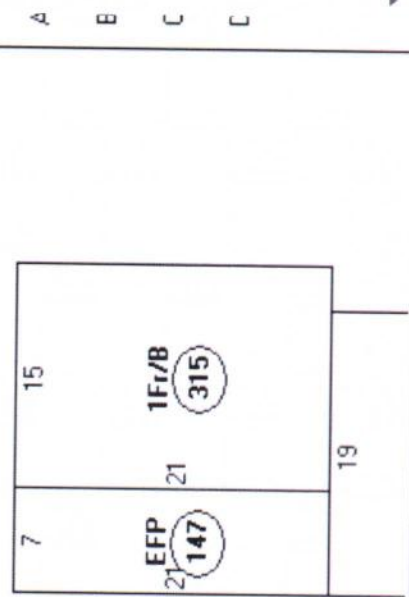
Parcel - Location - Zoning - Assessment

Map-Block-Lot: 38C-008-001	Zoning:	Assessment:
Location: 142 GROVE ST	Neighborhood: 13	Land: 78,100
#Living Units: 1	Deed Book: 11061	Building: 108,900
Class: R-101	Deed Page: 95	Total: 187,000

Dwelling Information

Style:	Conventional
Year Built:	1900
Story Height:	1.5
Attic:	None
Basement:	Full
Total Rooms:	6
Bedrooms:	3
Full Baths:	1
Half Baths:	0
Exterior Walls:	Alum/Vinyl
Unfinished Area:	0
Ground Floor Area:	456
Total Living Area:	1113

Building Sketch





Map Sheet 38C

Map Sheet
38C



These maps are intended for use in assessments and they contain errors and discrepancies. Individuals requiring an authoritative version should refer to the official records of the City of Northampton. For more information, please contact the City of Northampton Assessor's Office at (413) 253-3333 or visit our website at www.northamptonma.gov.



Northampton Assessors Map

Property Type(s): SF

Status: SLD

Timeframe: TODAY -24 MONTHS

Towns: Northampton, MA

Advanced Criteria: ■ Number of Total Baths=1 ■ Number of Rooms=6 ■ Number of Bedrooms=3

4 Listings

Single Family Listings

MLS #	Status	Address	Town	Description	DOM	List Price	Sale Price
71259855	SLD	7 Market Street	Northampton, MA	6 room, 3 bed, 1f 0h bath Farmhouse	236	\$165,000	\$145,000
71411548	SLD	142 Grove Street	Northampton, MA	6 room, 3 bed, 1f 0h bath Farmhouse	26	\$195,000	\$192,100
71397691	SLD	496 Elm Street	Northampton, MA	6 room, 3 bed, 1f 0h bath Farmhouse	83	\$209,000	\$203,000
71612007	SLD	23 Hayes Avenue	Northampton, MA	6 room, 3 bed, 1f 0h bath Farmhouse	506	\$209,900	\$204,000

Single Family Listings: 4 Avg. Liv.Area SqFt: 1,237.75 Avg. List\$: \$194,725 Avg. List\$/SqFt: \$159 Avg. DOM: 212.75

Avg. Sale\$: \$186,025 Avg. Sale\$/SqFt: \$152

The information in this listing was gathered from third party sources including the seller and public records. MLS Property Information Network and its subscribers disclaim any and all representations or warranties as to the accuracy of this information. Content ©2014 MLS Property Information Network, Inc.

FUEL DISTRIBUTION FACILITY PROXIMITY COMPARABLE #4

59 INGERSOLL GROVE, SPRINGFIELD, MA

LOCATED WITHIN 400 'OF SURNER HEATING FUEL STORAGE FACILITY IN SPRINGFIELD, MA

SALES PRICE: \$152,500

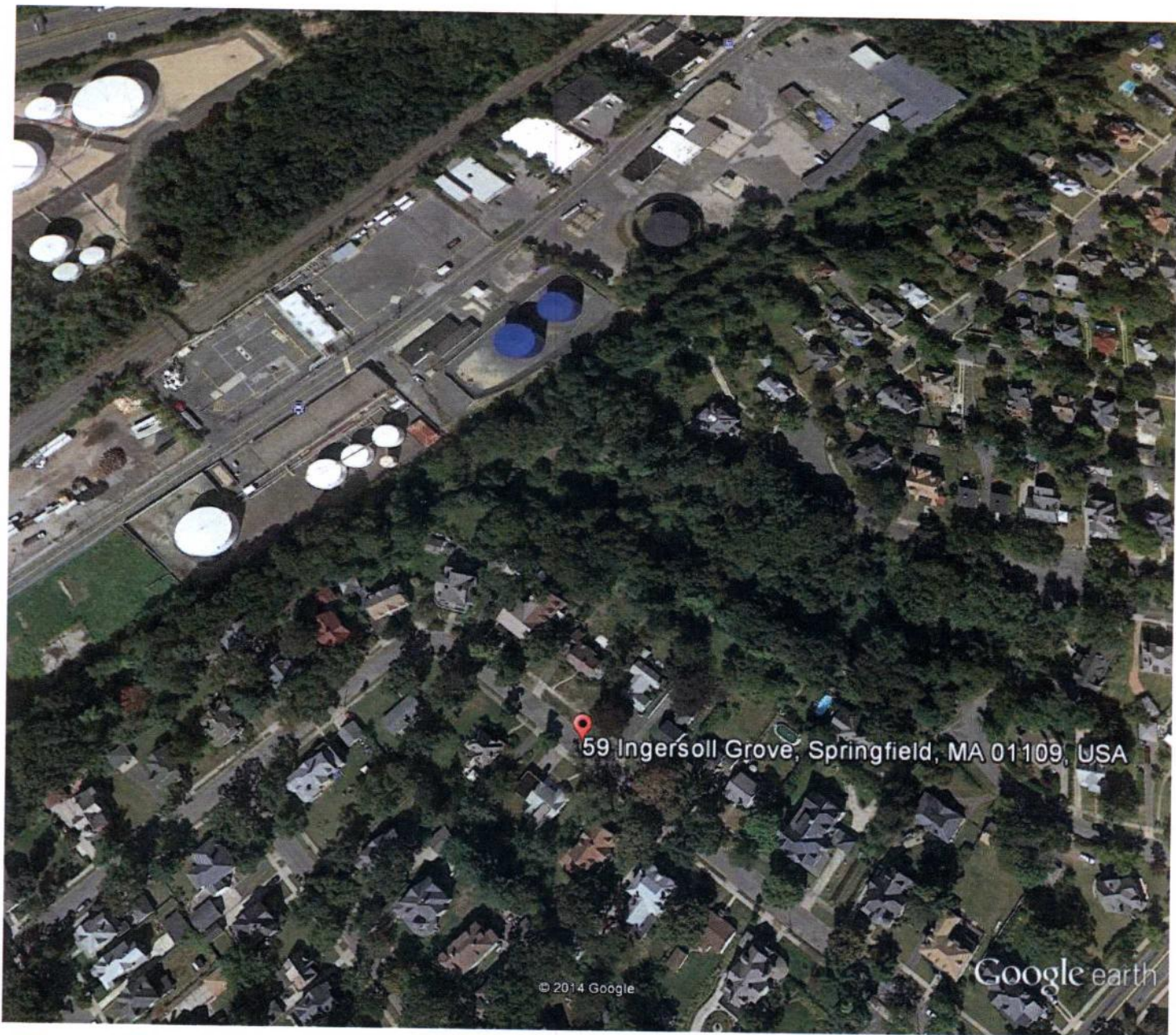
DAYS ON MARKET: 68

ASSESSED VALUE: \$147,200

AVERAGE MLS SALES PRICE OF 6 ROOM 3 BEDROOM 1.5 BATH CAPES IN PAST 24 MONTHS: \$114,300

AVERAGE DAYS ON MARKET: 116.24

NO APPARENT DIMINUTION



59 Ingersoll Grove, Springfield, MA 01109, USA

© 2014 Google

Google earth

Google earth

feet
meters



600

200





MLS # 71650118 - Sold
Single Family - Detached

59 Ingersoll Grove
Springfield, MA : Hill McKnight 01109
Hampden County
Style: Cape
Color: white
Grade School:
Middle School:
High School:
Handicap Access/Features:
Directions: **off Worthington Street**

List Price: **\$159,475**
Sale Price: **\$152,500**

Total Rooms: **6**
Bedrooms: **3**
Bathrooms: **1f 1h**
Master Bath:
Fireplaces: **1**

Remarks

Royal Barry Wills custom Cape located in Historic McKnight District. This is NOT a drive by it is charming and wow back yard! Enjoy the beautiful gardens and private yard from the Living Room, Dining Room and Kitchen. Wood floors through out. Living Room with fireplace and built ins open to Dining room all with 3 picture windows with stunning views and access to deck. Kitchen has dinette area and access to side yard. Sunny side/front porch overlooking small private courtyard. Very private yard with gazebo overlooking woods. Newer roof in 06, Newer windows, furnace and updated electric panel. Inground sprinklers front and back. When entertaining you can get 4 cars along the driveway to the side of the garage. Currently heated by oil \$2299/year however GAS is in the house.

Property Information

Approx. Living Area: **1402 sq. ft.**
Living Area Includes:
Living Area Source: **Public Record**
Living Area Disclosures:
Disclosures:

Approx. Acres: **0.35 (15407 sq. ft.)**
Heat Zones: **1 Central Heat, Radiant, Oil**
Cool Zones: **None**

Garage Spaces: **1 Attached, Garage Door Opener, Side Entry**
Parking Spaces: **6 Off-Street, Paved Driveway**
Approx. Street Frontage:

Room Levels, Dimensions and Features

Room	Level	Size	Features
Living Room:	1	21x15	Fireplace, Flooring - Hardwood, Window(s) - Picture, Main Level, Exterior Access, Open Floor Plan
Dining Room:	1	12x12	Flooring - Hardwood, Window(s) - Picture, Main Level, Exterior Access, Open Floor Plan
Kitchen:	1		Flooring - Vinyl, Window(s) - Picture, Dining Area, Pantry, Main Level, Exterior Access
Master Bedroom:	1	13x16	Bathroom - Full, Closet, Flooring - Hardwood, Main Level
Bedroom 2:	1	12x9	Closet, Flooring - Hardwood, Main Level
Bedroom 3:	2	15x11	Closet, Flooring - Hardwood
Bath 1:	1		Bathroom - Full, Bathroom - Tiled With Tub & Shower, Closet - Linen, Flooring - Stone/Ceramic Tile, Main Level
Laundry:	B	--	--

Features

Appliances: **Range, Dishwasher, Disposal, Microwave, Refrigerator, Washer, Dryer**
Area Amenities: **Public Transportation, Shopping, Tennis Court, Park, Medical Facility, Laundromat, Conservation Area, Highway Access, Public School, University**
Basement: **Yes Full, Partially Finished**
Beach: **No**
Construction: **Frame**
Electric: **100 Amps**
Energy Features: **Insulated Windows, Storm Windows**
Exterior: **Clapboard**
Exterior Features: **Porch, Deck, Gutters, Storage Shed, Professional Landscaping, Sprinkler System, Screens, Fenced Yard, Gazebo**
Flooring: **Wood, Tile**
Foundation Size: **0**
Foundation Description: **Concrete Block**
Hot Water: **Oil, Tankless**
Insulation: **Full**
Interior Features: **Security System, Cable Available**
Lot Description: **Wooded, Paved Drive**
Road Type: **Public, Paved**
Roof Material: **Asphalt/Fiberglass Shingles**
Sewer Utilities: **City/Town Sewer**
Utility Connections: **for Electric Oven, for Electric Dryer, Washer Hookup**
Water Utilities: **City/Town Water**
Waterfront: **No**
Water View: **No, --**

Other Property Info

Adult Community: **No**
Disclosure Declaration: **Yes**
Exclusions:
Home Own Assn: **No**
Lead Paint: **Unknown**
UFFI: **Unknown** Warranty Features: **No**
Year Built: **1947** Source: **Public Record**
Year Built Description: **Actual**
Year Round: **Yes**
Short Sale w/Lndr.App.Reg: **No**
Lender Owned: **No**

Tax Information

Pin #:
Assessed: **\$147,200**
Tax: **\$2901.31** Tax Year: **2013**
Book: **19372** Page: **484**
Cert: **7/31/2012**
Zoning Code: **r**
Map: Block: Lot:

Office/Agent Information

Listing Office: **Real Living Realty Professionals, LLC** (413) 567-3361
Listing Agent: **The Denise DeSellier Team** (413) 567-6392
Team Member:
Sale Office: **Sears Real Estate** (413) 785-1636
Sale Agent: **John Bellows** (413) 567-0450
Listing Agreement Type: **Exclusive Right to Sell**
Entry Only: **No**
Showing: Sub-Agent: **Sub-Agency Relationship Not Offered**
Showing: Buyer-Agent: **Call MAPASS at 508-389-1780**
Showing: Facilitator: **Call MAPASS at 508-389-1780**
Special Showing Instructions:

Compensation

Sub-Agent: **Not Offered**
Buyer Agent: **2.5**
Facilitator: **0**
Compensation Based On: **Net Sale Price**

Firm Remarks

cooperative compensation based on net sales price

Market Information

Listing Date: **3/26/2014**
Days on Market: Property has been on the market for a total of **68** day(s)
Expiration Date:
Original Price: **\$164,475**
Off Market Date: **6/2/2014**
Sale Date: **6/23/2014**
Sale Price: **\$152,500**
Offer Date: **6/2/2014**

Listing Market Time: MLS# has been on for **68** day(s)
Office Market Time: Office has listed this property for **68** day(s)
Cash Paid for Upgrades:
Seller Concessions at Closing:
Financing: **Cash**

MASSACHUSETTS STATE EXCISE TAX
HAMPDEN COUNTY REGISTRY OF DEEDS
Date: 06-23-2014 @ 01:16pm
Ct1#: 234 Doc#: 28886
Fee: \$695.40 Cons: \$152,500.00

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS THAT I, SEAN BOARDWAY of 59 Ingersoll Grove, Springfield, Hampden County, Massachusetts

for consideration paid and in full consideration of ONE HUNDRED FIFTY-TWO THOUSAND FIVE HUNDRED (\$152,500.00) DOLLARS

grant to SYLVIA STAUB, individually, of 144 West 86 Street, Apt. # 12D, New York, NY

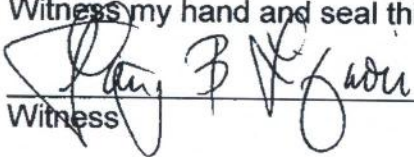
with Warranty Covenants

The land in Springfield, Hampden County, Massachusetts with the buildings thereon as is shown on "Exhibit "A" annexed hereto and incorporated herein by reference.

BEING the premises most commonly known as 59 Ingersoll Grove, Springfield, Massachusetts.

BEING the same premises conveyed to Sean Boardway by deed of Thaddeus J. Devansky and William R. Guzy dated July 23, 2012 and recorded on July 31, 2012 in the Hampden County Registry of Deeds in Book 19372, Page 484.

Witness my hand and seal this 20th day of June, 2014.


Witness

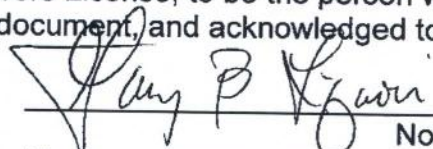

SEAN BOARDWAY

COMMONWEALTH OF MASSACHUSETTS

County of Hampden

June 20, 2014

On this day of June, 2014, before me, the undersigned notary public, personally appeared SEAN BOARDWAY, proved to me through satisfactory evidence of identification, which was a Massachusetts Drivers License, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.


Notary Public

My Commission Exp.: 12-15-2017



Property Address: 59 Ingersoll Grove, Springfield, Massachusetts

Exhibit "A"

The land in Springfield, Hampden County, Massachusetts bounded and described as follows: bounded

- SOUTHWESTERLY: by Ingersoll Grove, Sixty (60) feet;
- SOUTHEASTERLY by land formerly of one George F. Fowler, Two Hundred Fifty-Seven and 51/100 (257.51) feet
- NORTHEASTERLY by land of the City of Springfield, Sixty (60) feet, and
- NORTHWESTERLY by land of Edward Radding, about Two Hundred Fifty-Seven and 51/100 (257.51) feet.

Subject to Easement to the City of Springfield for Water Pipe Rights recorded in the Hampden County Registry of Deeds in Book 739, Page 567.

RESIDENTIAL PROPERTY RECORD CARD

CITY OF SPRINGFIELD

Situs: 59 INGERSOLL GROVE

Map ID: 069250045

Class: Single Family Residence

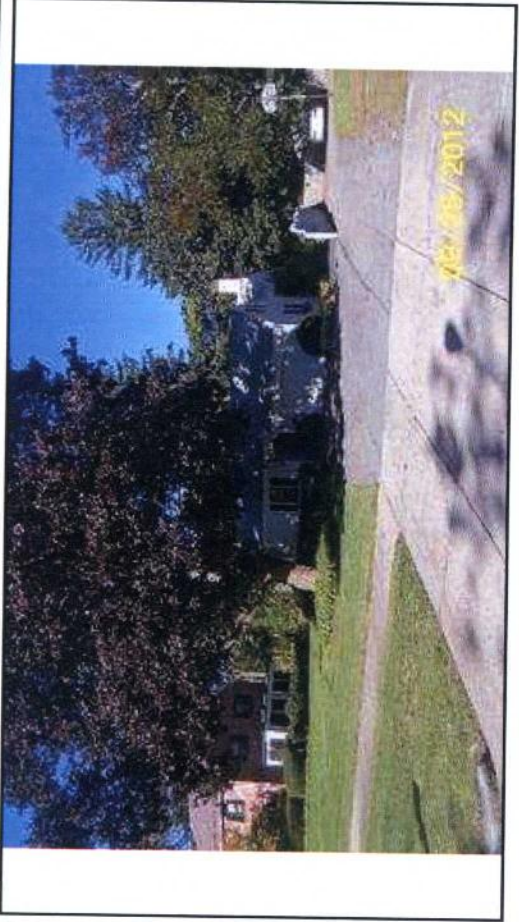
Card: 1 of 1

Tax year 2014

Current Owner
 BOARDWAY SEAN
 59 INGERSOLL GROVE
 SPRINGFIELD
 MA 01109

General Information
 Living Units 1
 Neighborhood 114
 Alternate Id
 Vol/Pg
 District COS
 Zoning R1
 Class RESIDENTIAL

Land Information
 Type
 Size Influence Factors Influence % Value 22,600
 PRIMARY SQUARE FOOT 15,405
 Total Acres: 0.3537



Permit Information

Date Issued	Number	Price	Purpose	% Complete

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	22,600	22,600	22,600	0	22,600
Building	115,200	124,600	120,600	0	124,600
Total	137,800	147,200	143,200	0	147,200

Value Flag MARKET APPROACH

Sales / Ownership History

Transfer Date	Price	Type	Deed Reference	Grantee	Grantor
2012-07-31	145,000	LAND + BLDG	19372/484	BOARDWAY SEAN	DEVANSKY THADDEUS J & WILLIAM R GUZZY
2003-09-30	145,000	LAND + BLDG	13632/0331	DEVANSKY THADDEUS J & WILLIAM R GUZZY	POMEROY EDWARD E III
2000-11-20	51,000	LAND + BLDG	11414/0232	POMEROY EDWARD E III	MICKIE GARY R
1988-07-08	120,000	LAND + BLDG	06895/0356	MCKIE GARY R + EDWARD E POMERO	PAULIDES ANNA S
1988-05-20	0	LAND + BLDG	06842/0001	PAULIDES ANNA S	PAULIDES HERBERT B & CAROLYN R
1987-06-10	0	LAND + BLDG	06518/0046	PAULIDES HERBERT B & CAROLYNR	PAULIDES ANTHONY N & ANNA S

Dwelling Information

Style OTHER Year Built 1947
 Story height 1.00 Eff Year Built 0
 Attic PART FINSH Ground Floor Area 688
 Exterior Walls FRAME Amenities
 Masonry Trim Total Living Area 1,402
 Color GRAY

Basement

Basement FULL Car Bsmt Gar 0
 FBLA Size FBLA Type
 Rec Rm Size Rec Rm Type Fireplaces

Heating & Cooling

Heat Type BASIC Stacks 1
 Fuel Type OIL Openings 1
 System Type HOT WATER Pre-Fab 0

Room Detail

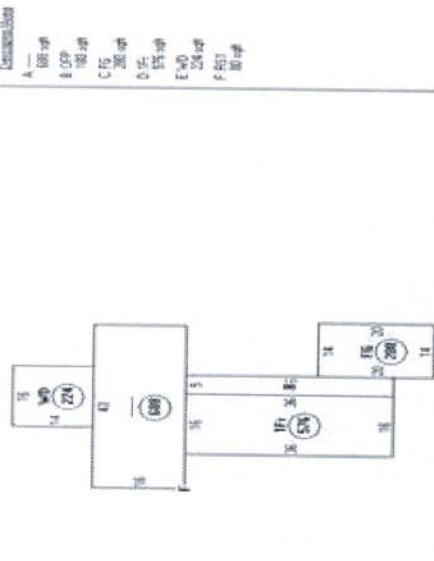
Bedrooms 3 Full Baths 1
 Family Rooms 0 Half Baths 1
 Kitchens Extra Fixtures 1
 Total Rooms 5 Bath Type
 Kitchen Type Bath Remod NO
 Kitchen Remod NO

Adjustments

Int vs Ext SAME Unfinished Area 0
 Cathedral Ceiling Unheated

Grade & Depreciation

Grade C+ Market Adj 0.00
 Condition AVERAGE Functional
 CDU GOOD Economic
 Cost & Design % Good Ovr
 % Complete



Dimensions

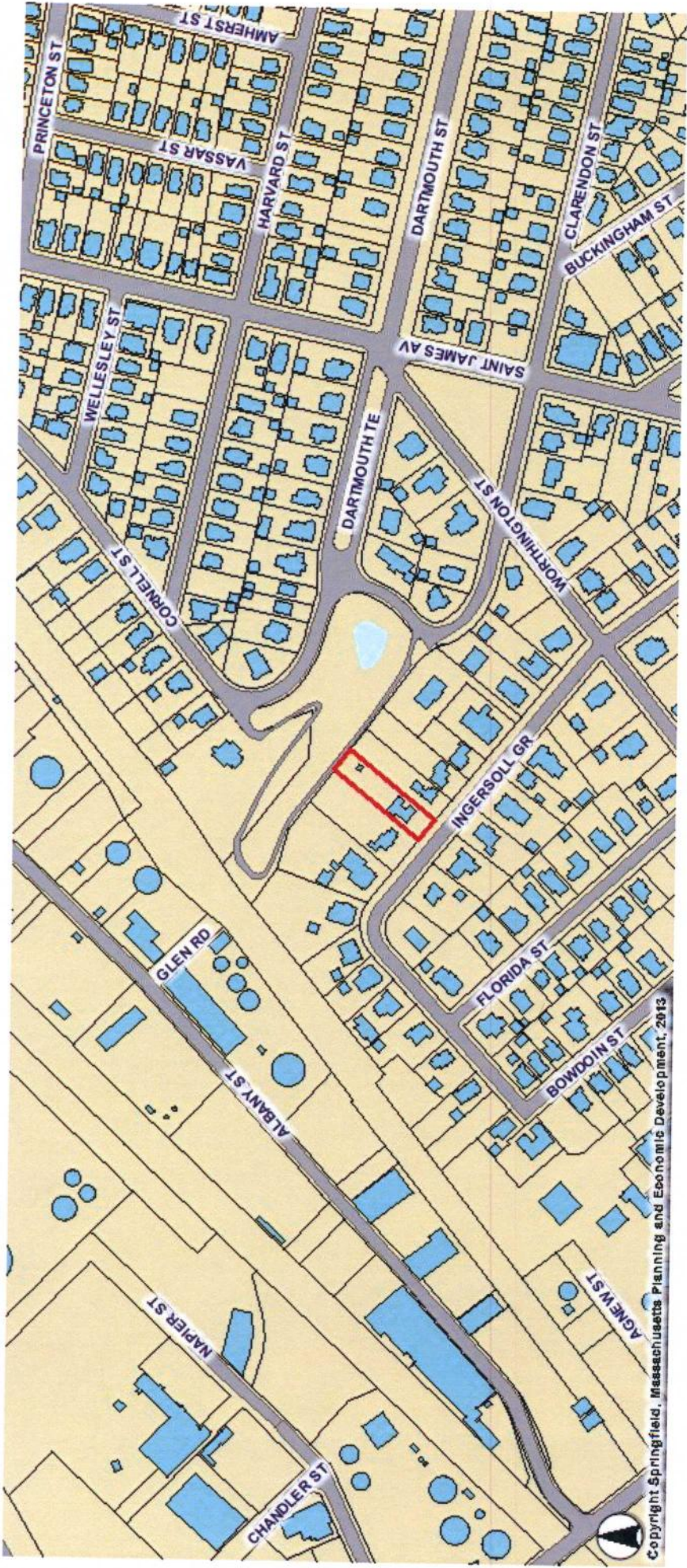
A --- 100' x 100'
 B --- 100' x 100'
 C --- 100' x 100'
 D --- 100' x 100'
 E --- 100' x 100'
 F --- 100' x 100'

Outbuilding Data

Line Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade
1	FRAME UTILITY SHED	1988	8	10	1,00	80 C

Comparable Sales Summary

Parcel ID	Sale Date	Sale Price	TLA	Style	Yr Built	Grade
028400031	2012-06-19	108,000	1,573	8	1913	C
069250045	2012-07-31	145,000	1,402	9	1947	C+
028400051	2013-01-31	150,000	1,348	6	2012	C
099350010	2013-06-24	128,000	2,397	5	1898	B-
063800016	2013-07-19	100,000	2,289	5	1899	C+



Copyright Springfield, Massachusetts Planning and Economic Development, 2013

Property Type(s): SF

Status: SLD

Timeframe: TODAY - 24 MONTHS

Towns: Springfield, MA

Advanced Criteria: ■ Number of Total Baths=1.5 ■ Number of Rooms=6 ■ Number of Bedrooms=3 ■ Style =C

38 Listings

Single Family Listings

MLS #	Status	Address	Town	Description	DOM	List Price	Sale Price
71455697	SLD	200 Florida	Springfield, MA : Hill McKnight	6 room, 3 bed, 1f 1h bath Cape	147	\$52,000	\$48,500
71401283	SLD	1090 Roosevelt Ave	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	26	\$59,900	\$58,000
71491773	SLD	67 Somerset	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	158	\$59,900	\$52,000
71434196	SLD	22 Montclair St	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	75	\$64,900	\$32,500
71462397	SLD	124 Merrimac Ave	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	89	\$74,900	\$74,900
71425335	SLD	814 Belmont Ave.	Springfield, MA : Forest Park	6 room, 3 bed, 1f 1h bath Cape	74	\$79,900	\$68,500
71420876	SLD	68 Montgomery Street	Springfield, MA : Indian Orchard	6 room, 3 bed, 1f 1h bath Cape	13	\$79,900	\$75,000
71377452	SLD	98 Brunswick Street	Springfield, MA : Forest Park	6 room, 3 bed, 1f 1h bath Cape	50	\$79,900	\$73,500
71442461	SLD	68 Bither St	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	7	\$84,900	\$70,000
71643003	SLD	22 LeRoy Place	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	37	\$84,900	\$89,500
71617481	SLD	77 Davis St	Springfield, MA : East Springfield	6 room, 3 bed, 1f 1h bath Cape	191	\$97,500	\$93,500
71371484	SLD	118 Ontario	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	440	\$99,500	\$88,000
71348659	SLD	79 Harmon Ave.	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	74	\$109,900	\$98,000
71426267	SLD	173 Daviston St	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	87	\$119,900	\$107,000
71601744	SLD	32 Rathbun Street	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	114	\$119,900	\$115,000
71630357	SLD	1090 Roosevelt Extention	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	10	\$119,900	\$110,000
71411957	SLD	1050 Berkshire Ave	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	109	\$120,000	\$112,500
71337038	SLD	695 Plumtree Rd	Springfield, MA : Indian Orchard	6 room, 3 bed, 1f 1h bath Cape	104	\$122,000	\$122,000
71604498	SLD	1274 Berkshire Ave	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	166	\$124,900	\$120,000
71592990	SLD	111 Goodwin St	Springfield, MA : Indian Orchard	6 room, 3 bed, 1f 1h bath Cape	374	\$127,000	\$118,000
71502333	SLD	1412 Wilbraham Rd	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	435	\$128,900	\$128,900
71510164	SLD	86 East St	Springfield, MA : Sixteen Acres	6 room, 3 bed, 1f 1h bath Cape	16	\$129,500	\$123,000
71458486	SLD	49 Burnside Ter	Springfield, MA : East Springfield	6 room, 3 bed, 1f 1h bath Cape	267	\$132,900	\$132,900
71586263	SLD	30 Lynwood Ter	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	84	\$135,000	\$135,000
71544216	SLD	29 Pelham St	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	150	\$139,900	\$144,000
71463457	SLD	49 Wing St.	Springfield, MA : Indian Orchard	6 room, 3 bed, 1f 1h bath Cape	149	\$139,900	\$140,000
71367718	SLD	104 Gilman Street	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	87	\$140,000	\$136,000
71441805	SLD	180 Eddy St	Springfield, MA	6 room, 3 bed, 1f 1h bath Cape	194	\$145,900	\$139,900
71627646	SLD	107 Grandview St	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	64	\$147,500	\$144,500
71377187	SLD	80 Peekskill Avenue	Springfield, MA : Sixteen Acres	6 room, 3 bed, 1f 1h bath Cape	56	\$149,000	\$141,000
71559456	SLD	24 Thornton Street	Springfield, MA : East Springfield	6 room, 3 bed, 1f 1h bath Cape	254	\$149,900	\$138,000
71496971	SLD	168 Ellsworth Ave	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	55	\$153,995	\$152,500
71650118	SLD	59 Ingersoll Grove	Springfield, MA : Hill McKnight	6 room, 3 bed, 1f 1h bath Cape	68	\$159,475	\$152,500
71527305	SLD	26 Granger St	Springfield, MA : Sixteen Acres	6 room, 3 bed, 1f 1h bath Cape	32	\$159,500	\$151,000
71606108	SLD	10 Old Brook Rd	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	48	\$159,900	\$159,900
71465664	SLD	2020 Wilbraham Rd	Springfield, MA : Sixteen Acres	6 room, 3 bed, 1f 1h bath Cape	40	\$168,900	\$163,000
71534410	SLD	54 Wayside St	Springfield, MA : East Forest Park	6 room, 3 bed, 1f 1h bath Cape	4	\$169,900	\$169,900
71457907	SLD	8 Rhinebeck Ave	Springfield, MA : Sixteen Acres	6 room, 3 bed, 1f 1h bath Cape	69	\$169,900	\$165,000

Single Family Listings: 38 Avg. Liv.Area SqFt: 1,420.53 Avg. List\$: \$120,018 Avg. List\$/SqFt: \$88 Avg. DOM: 116.24

Avg. Sale\$: \$114,300 Avg. Sale\$/SqFt: \$83