

September 12, 2016

Mayor Elizabeth Patterson and Benicia City Council Members
Benicia City Hall
250 East L Street
Benicia, CA 94510

As a long-time Benicia resident and Benicia Industrial Park Association business owner, I am passionate about the well-being of this city. I truly believe that the lives of Benicia citizens improved years ago when the Benicia Arsenal was privatized and businesses, including the refinery, came to the city of Benicia. I believe it to be in the best interest of every Benicia citizen to keep the Benicia Industrial Park businesses healthy and growing and to support the needs of those businesses. There should be no question that the Valero refinery is the hub and most important business in the Benicia Industrial Park.

The Valero Crude by Rail Project has been under scrutiny for nearly four years by the city and independent experts. After years of drawn out discussion, we're finally at a critical juncture as we await a declaratory order from the Surface Transportation Board (STB).

The STB is the federal entity and leading authority on preemption issues, and a declaratory order will address pressing issues that will help protect Benicia from possible legal challenges. The City Council decided in April that this clarifying information was important enough to wait for, and the critical need for this information has not changed. After nearly four years of analyses and planning, it would be a devastating mistake to reject a project that has the potential to substantially improve our city.

It is imperative to hold on this matter until a decision is issued by the STB in order to ensure economic security for our city and its citizens.

In a 2014 joint meeting between the Finance Committee and City Council to discuss the General Fund 10-Year Forecast, many comments were made about the need for increased economic activity to improve stability and prosperity for the businesses in the Benicia Industrial Park. The presentation revealed that in just a few short years, expenses will start outpacing revenues and force our city to begin making tough decisions that hurt our small businesses and community.

Simple infrastructure projects such as these will help ensure continued economic development will protect Benicia's economy and maintain our current quality of life.

Fiscal health means good-paying local jobs for our residents, business opportunity, and a strong tax base to continue funding vital local services, such as public safety.

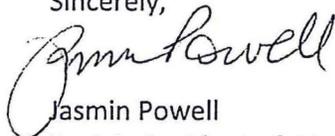
Fiscal health also means home values that continue to grow for residents. We are fortunate to have higher home values than neighboring communities and continued economic development is vital to protecting them. City leaders must develop a plan that ensures a bright, economically vibrant future for the next generation. Thirty percent of Benicia's population is under the age of 19, and we have a duty to set them up for continued success. Doing so requires that we protect Benicia's fiscal health now in order to lay the path for a brighter future.

Economics aside, Valero also makes an effort to be a good neighbor environmentally. The refinery operates with approximately 70 percent of their product as California Air Resources Board gasoline – California's clean-burning fuel – and is next in line of safe, eco-friendly improvements that will increase productivity and efficiency. The Final Environmental Impact Report also states that this project will reduce GHGs, creating a positive localized environmental impact while also helping the state achieve its ambitious GHG goals.

Benicia is fortunate to have Valero Refinery as a neighbor, and we should support simple projects like these that will help to maintain the integrity of our city. Our City Councilmembers must make decisions that are driven by the desire to enhance the daily lives of Benicians, and waiting for a declaratory order from the STB will ensure our City has the ability to thrive, now and in the future.

I ask that you wait for a declaratory order from the Surface Transportation Board before making your decision, which I personally hope will be positive, on the Valero Crude by Rail Project.

Sincerely,



Jasmin Powell
Benicia Resident of 44 years and
Business Owner
Dunlop Manufacturing, Inc.
PO Box 846 Benicia, CA

Teresa Olson

From: Heather McLaughlin
Sent: Monday, September 19, 2016 9:24 AM
To: C. Bart Sullivan
Cc: Christina Ratcliffe; Anne Cardwell; Teresa Olson
Subject: RE: Article
Attachments: Article 1.7.pdf

Categories: CBR Comment

Hi! Thank you. We will add it to the website and have it at the meeting as with the other comments. In the future would you please make sure to copy Teresa on the emails as well. She's the one in charge of posting it now that Amy is gone. If you include us on the same email then we won't be sending it around to each other unnecessarily. This helps me with the records requests and saves some trees.

Thanks, Heather

From: C. Bart Sullivan [mailto:patenthelp@yahoo.com]
Sent: Monday, September 19, 2016 8:48 AM
To: Heather McLaughlin <HMclaughlin@ci.benicia.ca.us>
Subject: Article

Hi Heather,

Attached is a first of a series of articles that we and are putting together pertaining to the crude-by-rail project. Most of the information is from the city website, but we have found that most people do not understand what the project is and its ramifications to the city. Even though the city has done a good job of posting information, most people just don't have the time or patience to wade through the thousands of documents and reports. We felt that these articles will help in that regard. Even though most of the information is publicly available on the city website, I will be sending the article to the city today to add to the public comments.

Also, I would like to set up an appointment to discuss constitutional law regarding the project as I have a few questions. When can you meet?

Sincerely,

Bart

C. Bart Sullivan, J.D.
Professional Patent Agent & IP Strategist
Reg. # 41,516
Mobile: (707) 853-6111
Fax: (707) 746-1762
<https://www.linkedin.com/in/patenthelp>

****CONFIDENTIAL INFORMATION****

This message is for the named person's use only. It may contain confidential, proprietary, or legally privileged information. No confidentiality or privilege is waived or lost by any mistransmission.

CRUDE-BY-RAIL: Design issues

Authors: C. Bart Sullivan EE, Amir Firouz CE, SE

Article 1: An Overview of the Crude-by-Rail project

Preface:

According to the proposed Valero crude-by-rail project, 100 rail cars a day of Bakken crude oil will be delivered to the Benicia Valero refinery every day, 365 days a year. As each rail car of Bakken crude oil has been shown to have the explosive power of two million sticks of dynamite,¹ we believe that citizens of Benicia should be aware of and understand the risks associated with the project as only one crude by rail accident in Benicia, or elsewhere associated with this project, will negatively impact Benicia, forever.

Public information:

As the proposed Valero crude-by-rail project, if implemented, will touch and impact many lives here in Benicia and beyond, we have decided to write a series of articles as public information to help the public understand the risks associated with the current engineering design of the Bakken crude by rail oil offloading facility and storage. This first article is a general overview of the Valero crude by rail project covering general risks and design concerns that will be viewed in more depth in later articles.²

Key points:

Due to Bakken crude being a more volatile compound than regular crude oil, the transportation and storage of Bakken crude has special logistical considerations and should be treated differently than regular crude. The Bakken rail cars will be positioned within a few feet of local businesses. Local businesses and public areas are located within the blast zone of the rail cars. Millions of gallons of Bakken crude will be stored in existing tanks, which are spaced very close together and are located within a few hundred feet of Benicia residents, and in relatively close proximity to Robert Semple Elementary School.

Bakken crude oil is about as explosive as gasoline:

Bakken crude oil (Bakken crude) comes from the Bakken formation, which is one of the largest contiguous deposits of oil and natural gas in the United States. The Bakken formation is an interbedded sequence of black shale, siltstone and sandstone that underlies large areas of northwestern North Dakota, northeastern Montana, southern Saskatchewan and southwestern Manitoba.³ Due to this rock structure, Bakken contains a considerable amount of volatile gases, which make

¹ Bomb trains – the scariest threat you didn't know about (retrieved 9/17/16 from <http://www.chicagomag.com/Chicago-Magazine/May-2016/Bomb-Trains/>)

² Most of the information for this article may be found at <http://www.ci.benicia.ca.us/index.asp?SEC=B7EDC93A-FFF0-4A14-9B1A-1C8563BC256A>.

³ Bakken formation: News, Map, videos and information sources (retrieved 9/17/2016 from <http://geology.com/articles/bakken-formation.shtml>)

Bakken crude about as flammable and explosive as gasoline.⁴ This simply means that unlike regular crude oil, for safety Bakken should be transported and stored in manner similar to other highly flammable liquids such as gasoline.

An aerial view of the proposed Valero crude by rail project:

Figure 1 illustrates an overview of the proposed crude-by-rail offloading and storage locations.⁵ As is illustrated in figure 1, the proposed offloading location of the rail cars containing the Bakken crude would be located adjacent to the Valero property line parallel to East Channel road. The Valero refinery property line is separated from East Channel road by Sulfur Springs Creek, which is a small creek. Sulfur Springs Creek is not a buffer zone but is rather a wildlife habitat that is accessible to the public and is used by people for recreational and educational purposes.

As illustrated in the upper right corner of figure 1, when the rail cars arrive, they would be positioned in a line parallel to East Channel road in a location a few feet adjacent to the Valero property fence line, and positioned within a few feet of Sulfur Springs Creek, East Channel road, and existing parking lots and their associated businesses that front East Channel road.

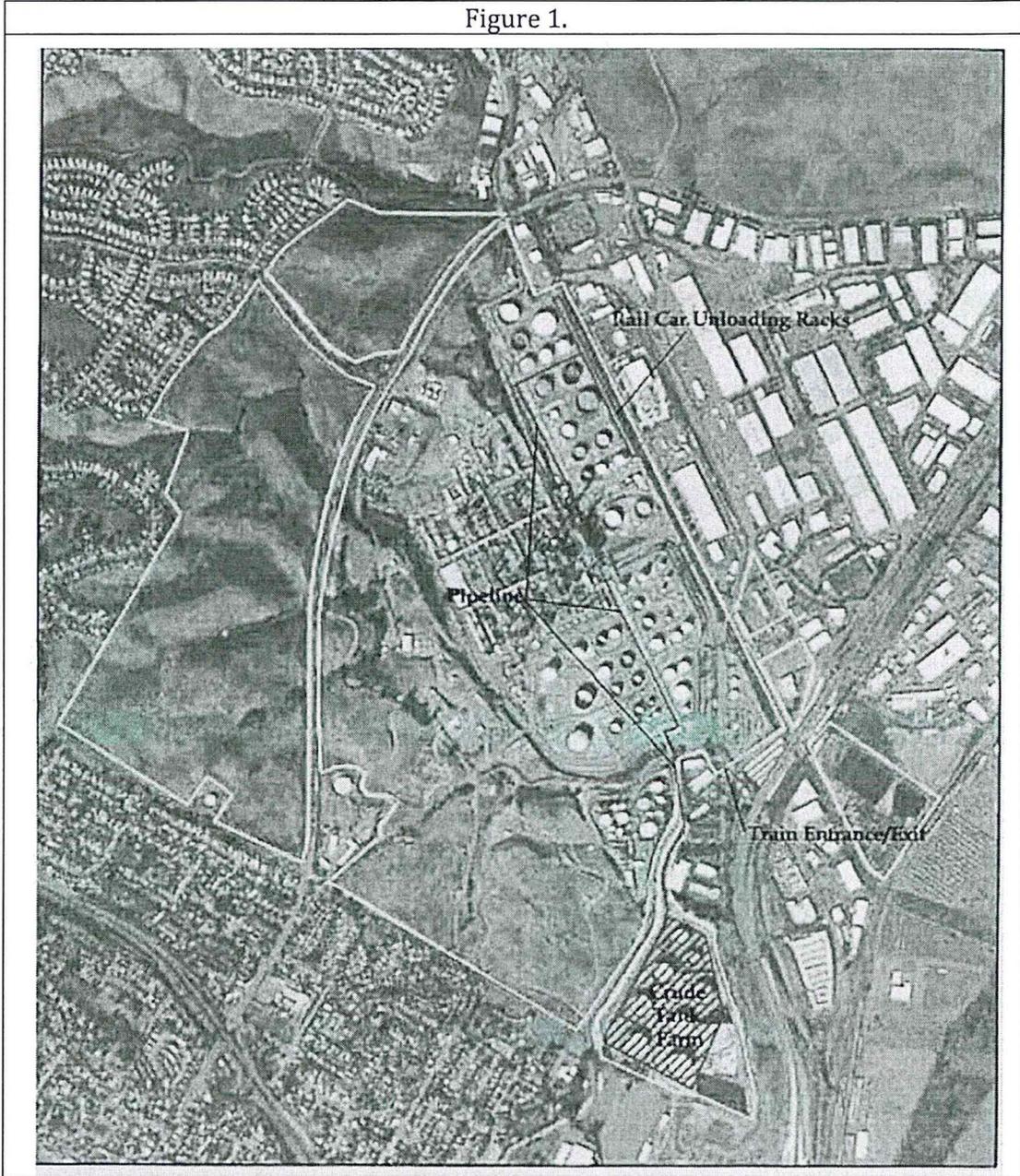
As also illustrated in figure 1, the offloaded Bakken crude would be piped to existing crude storage tank farm located as shown in the lower right corner of figure 1. The tank farm contains crude storage tanks that appear to be between 100 and 220 feet across, and are capable of storing several millions of gallons of Bakken crude. As shown, the proposed Bakken crude tank farm is located within a few hundred feet from Benicia homes.

Moreover, a review of figure 1 shows that there is a buffer zone of undeveloped land (shown as light green lines for color and light gray for black and white) on the west and south sides of the refinery (except for the tank farm on the south-east corner). The proposed locations for the volatile Bakken crude to be shipped, offloaded, stored, and processed on the site are located on the sides of Valero refinery with the least buffer distance to adjacent non-Valero businesses, on the north side (along the East Channel road) and the south-east tank farm extension. Because of this, the design seems to be a step backwards in terms of land use planning, at the expense of the safety of Benicia citizens and local business.

⁴ Why Bakken Oil Explodes. (retrieved 9/17/16 from <http://www.sightline.org/2014/01/21/why-bakken-oil-explodes>) "The PHMSA findings were corroborated by the industry-oriented Bakken Shale blog, calling it "flammable like gasoline." The "flash point"—the lowest temperature at which ignition can occur—is lower for Bakken oil than for lower grade crude oils, which means that Bakken crude is particularly flammable. The post also warns that when flammable gases are dissolved in oil, the oil should be "degasified" before transportation."

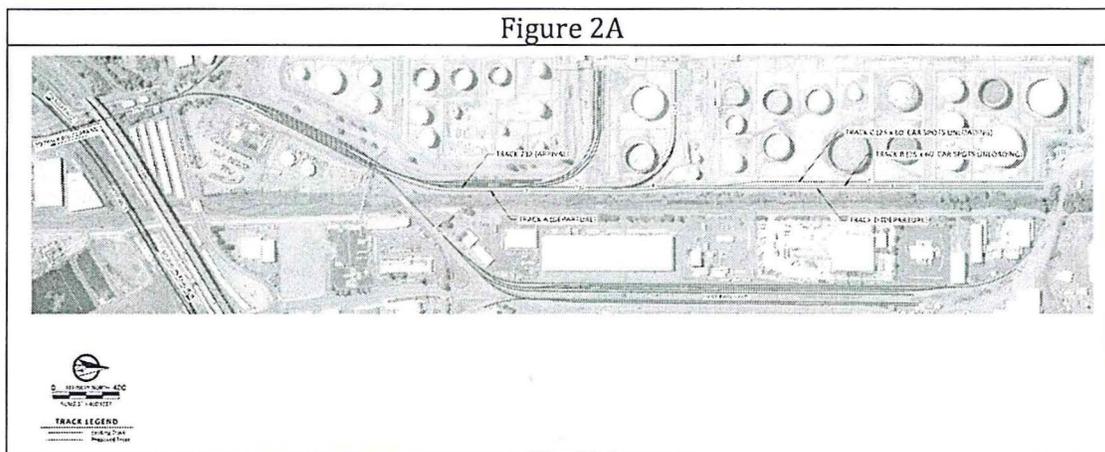
⁵ Nov. 2013 Valero Ap., Figure 2-2

Figure 1.



The Bakken crude offloading facility proposal positions rail cars very close to other onsite explosive fuel sources and offsite local businesses:

Figures 2A-C, illustrate the location and general design of the proposed Bakken crude offloading facility. Figure 2A shows an aerial view of Valero's proposed Bakken crude offloading facility,⁶ figure 2B shows the plan view of the proposed facility, and figure 2C shows an aerial view of the proposed facility and its proximity to Benicia businesses, such as Conco, Praxair, Insight glass, and other businesses. As illustrated in figures 2A-2C, the rail cars delivering the Bakken crude would be positioned within about 200 feet of these and other local businesses that front East Channel road.



⁶ Valero crude by rail project plans (retrieved 9/17/16 from http://www.ci.benicia.ca.us/vertical/sites/%7BF991A639-AAED-4E1A-9735-86EA195E2C8D%7D/uploads/Project_Plans_ONLINE_VERSION.pdf)

Figure 2B

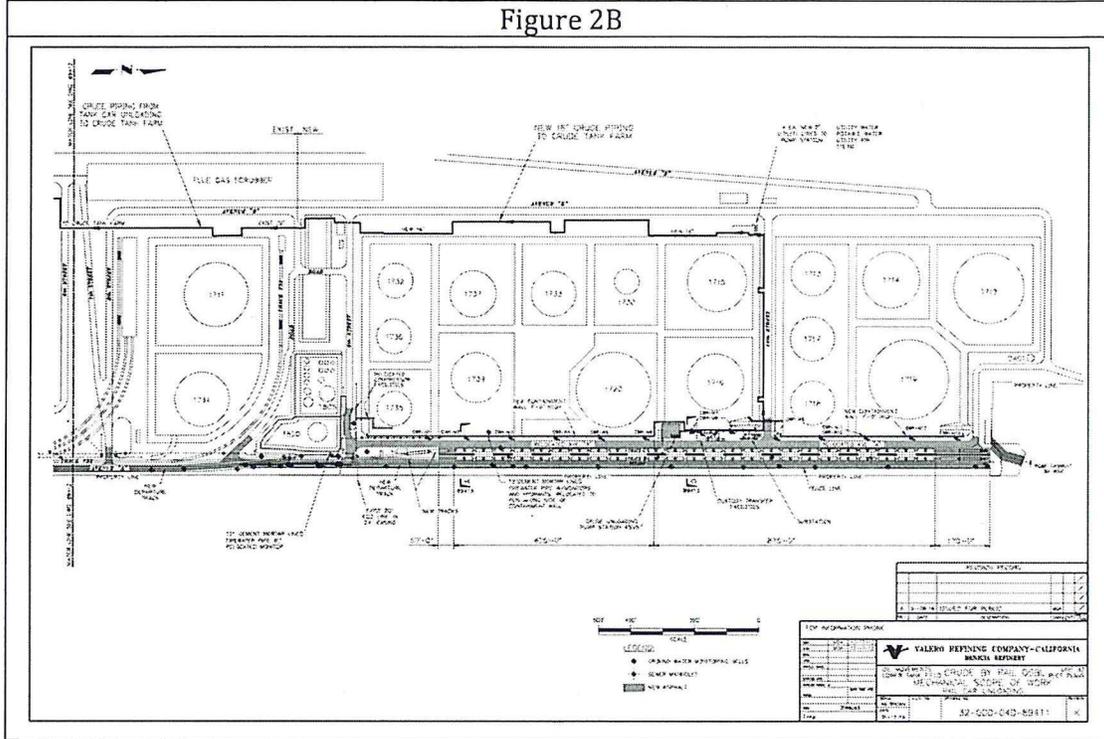
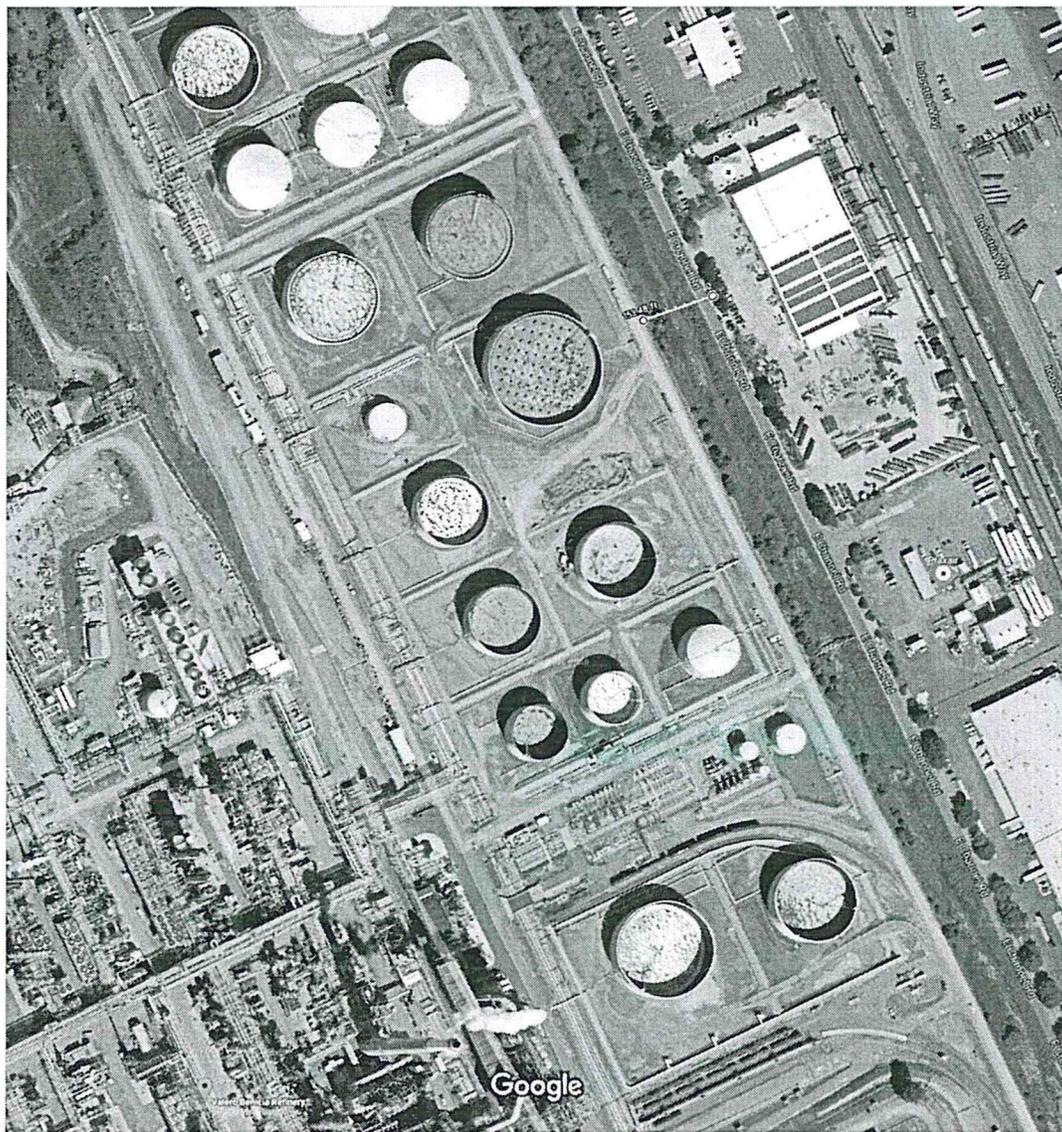


Figure 2C



Imagery ©2016 DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2016 Google 100 ft

The distance between the local business and the rail cars is critically close considering the potential power of a Bakken crude rail car explosion:

Each rail car being used to deliver Bakken crude is designed to hold about 34,000 gallons of crude oil.⁷ Due to their shape and construction, rail cars can explode in pretty much any direction, so it is good to look at the case where the car explodes like a bomb, radially. Figure 3 shows a mapping of radiant heat from a rail car explosion.⁸ Each dotted circle represents the thermal energy that would be produced from an explosion of just one of the rail cars holding Bakken crude.

Figure 3 also shows that Sulfur Springs Creek, East Channel road, and businesses fronting East Channel road are within the blast radiuses (blast zones), which could lead to serious injury or death for people located in and around those businesses, adults and children enjoying Sulfur Springs Creek, and people traveling along East Channel road adjacent to the rail cars. For example, expert Phyllis Fox states in her report to the city of Benicia, that “...based on this analysis, individuals along East Channel Road and Industrial Way within the thermal radiation 5 and 10 kW/m² circles would suffer serious injuries and fatalities....”⁹

In addition, because of the close proximity, the adjacent onsite storage tanks, rail cars, and other facilities are within the blast zones. For example, figures 2A-C and 3 show that crude storage tanks 1739, 1720, 1716, 1718, and 1719 are within the blast zones. Because of the close proximity between the rail cars and the tanks, a blast from a rail car filled with Bakken crude would likely damage and/or ignite the fuel in at least one of those tanks which could lead to catastrophic chain reaction onsite explosions which would likely extend outside the Valero property line.

⁷ DOT-111 tank car (retrieved 9/17/16 from https://en.wikipedia.org/wiki/DOT-111_tank_car)

⁸ Figure 7A. Comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project by Dr. Phyllis Fox, Ph.D., PE, April 4, 2016.

⁹ Comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project by Dr. Phyllis Fox, Ph.D., PE, April 4, 2016. Page 31.

Figure 3



The current proposed design does not consider vulnerability to external attacks:

Unfortunately, due to today's terrorist activities, terrorism and acts by individuals on society must be considered when designing a project that if attacked could lead to significant injury or death of citizens. Here, as illustrated in figures 2A-2C, the location of the proposed facility and position of offloading rail cars is directly adjacent to a public street, East Channel road. As such, due to the relatively fragile construction of the rail cars and their explosive power when loaded with Bakken crude, the rail cars are vulnerable and easy targets to attack from persons positioned outside the refinery. For example, it would be easy for a person to position himself or herself on East Channel road and fire a weapon at one or more of the rail cars. Please note that a consequence of this added vulnerability would likely include countermeasures to restrict access to areas adjacent to the offloading facility thereby eroding civil liberties of Benicia businesses and residents to access public and private areas of the city.

Due to the change from regular crude to Bakken crude, the Bakken Storage tanks are spaced very close together and too close to the public for public safety:

Figure 4 provides a closer aerial view of the Bakken crude storage tanks. The storage tanks range from about 100 feet to about 220 feet in diameter and are spaced about 200 feet apart. These tanks were originally designed and spaced to hold regular crude oil. Due to the change in oil from regular crude oil to much more volatile Bakken crude, these storage tanks do not seem to be spaced far enough apart to mitigate the effects of a Bakken crude explosion. For example, according to a report from "World Academy of Science, Engineering and Technology" to mitigate the effects of an explosion the safe recommended distance between tanks holding gasoline is between 181 meters to 904 meters (594 feet to 2,966 feet).¹⁰

Further, one of the accident scenarios mentioned in the environmental impact report (EIR), a thermal tear, could result in injuries and fatalities at the nearest residence at Lansing Circle, approximately 2,000 feet northwest of the northern end of the Project site. An accident at Tanks S-1701 to S-1708, which would store the imported crude oil, could additionally result in injuries and fatalities in the Hillcrest neighborhood, about 1,000 feet from the nearest residence on Hillcrest Avenue.¹¹ These accident scenarios should be considered.

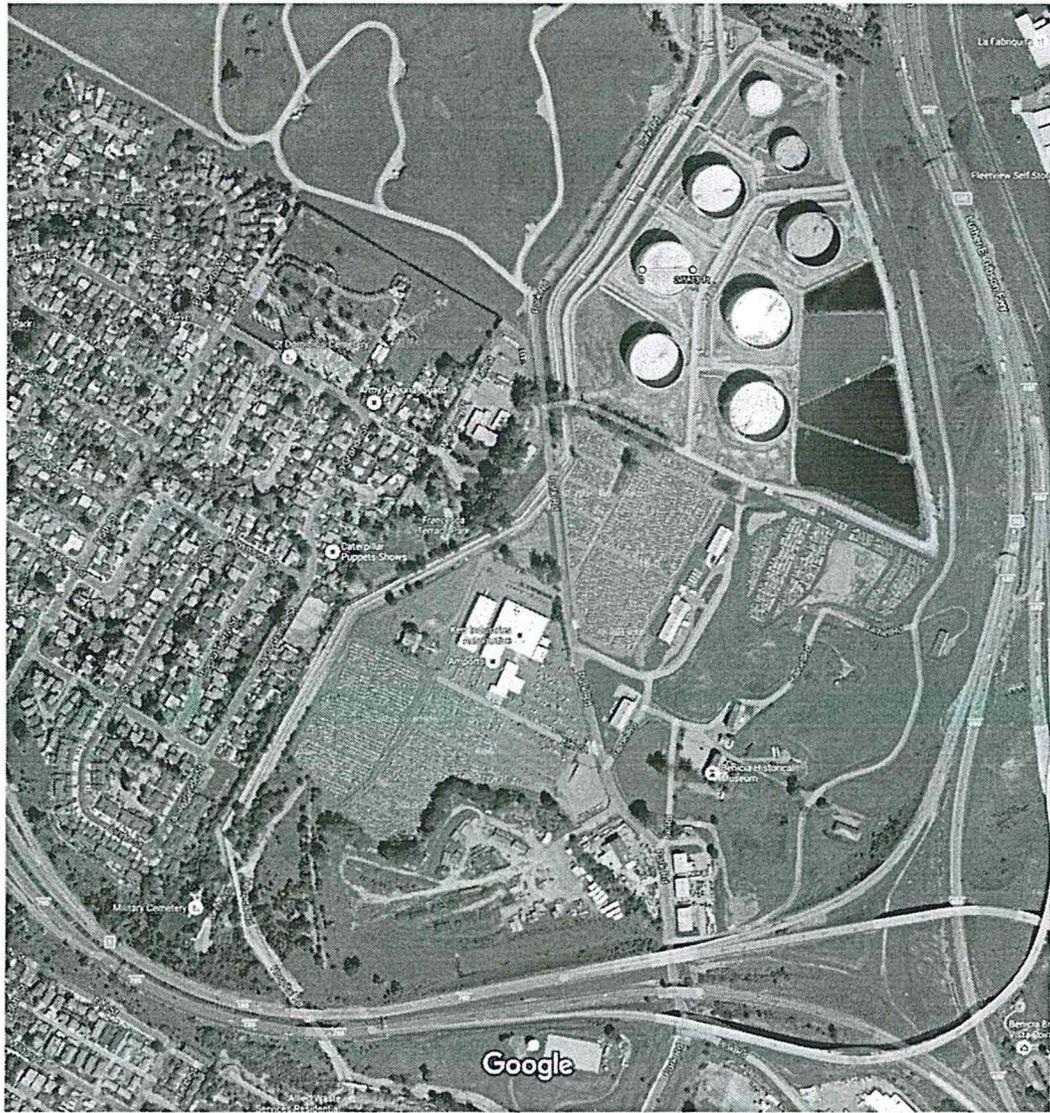
What to do now:

If you are concerned about Valero's crude-by-rail project, please contact the Benicia city council members to voice your concern. The contact information for the city of Benicia city council may be found at <http://www.ci.benicia.ca.us>.

¹⁰ World Academy of Science, Engineering and Technology
International Journal of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering Vol:8,
No:2, 2014

¹¹ Comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project by
Dr. Phyllis Fox, Ph.D., PE, April 4, 2016. Page 27.

Figure 4



Imagery ©2016 DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2016 Google 200 ft

Christina Ratcliffe

From: Amir Firouz <firouzam@gmail.com>
Sent: Tuesday, September 20, 2016 1:14 AM
To: Heather McLaughlin; Christina Ratcliffe
Cc: Mark Hughes; Christina Strawbridge; Alan Schwartzman; Tom Campbell; Elizabeth Patterson
Subject: Comments on Arcadis Memo regarding Sulfur Spring Setback.
Attachments: 7_Valero_Benicia_Sulfur_Springs_Setback_Evaluation_Memo_AF-Comments_pr.pdf

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Dear Christina,
Please have hard copies available for today's meeting for public and council members.

Thanks,
Amir Firouz
Benicia Residence

The annotated Arcadis memo is attached with my comments and rebuttal to the points that Arcadis has raised. Below is an outline summary of my comments.

1. Who surveyed (E) grade across Sulfur Spring, existing water elevation which is not known it water level at what season but it is obviously not MHWL that was needed by Arcadis, and who surveyed surveyed Finish Grade on Valero side and across the creek which are shown in cross sections 1-10.?
2. Why (E) grade on Valero side is not shown so that we see if and how much Valero is raising the grade on their side?
3. Where is the stamp and signature of surveyors/civil engineers that have prepared sections 1-10. Where is a legend for it?
4. Why these important data are being shown for the first time now in September 2016 and not in 2013 and why they are still called "STUDY"?
5. Why the City has accepted substandard drawings in 2013 with incomplete data for such an important, critical, and large project?
6. Why the City has accepted so much additional information after public review and discussion period on the original permit has ended?
7. Why the City accepts drawings and engineering data from paid consultants of an applicant without their engineers name and stamp and signature being shown on the drawing?
8. The City staff and concerned citizens that follow these proceedings are being treated badly by Valero, since we are spending considerable amount of time and effort reviewing incomplete and improperly prepared documents, and unlike corporations we do not get to deduct these expenses from our taxes as cost of doing business.
9. Based on FEMA flood map 634 dated 1/12/2015 Valero Avenue A is fully to partially flooded and is in Regulatory Floodway Zone, also some historical photos show the Sulfur Spring banks to be at about the same elevation on Valero and other sides of the creek. Moreover, Valero existing finish grade looks unnaturally much higher than the grade across the creek (east channel road side) in sections 1 through 8 compared to sections 9 and 10 and this appears to suggest that the refinery site has been raised artificially to make that property more useful and less prone to flood damage and consequently more

valuable . But this has not been a win-win situation for the properties on the other side of the creek and even downstream from the site. As a result of regrading, their properties have been adversely affected for ending up relatively lower in elevation and therefore on the losing side. They have become more prone to flood damage which would reduce their property values, increase their flood insurance rates, and increase risks of injury and damage. Such changes to grading and drainage of a flood plain zone are serious matter and are required to be reviewed and approved by the City and reported to other state agencies as well. Where are the records of this important change to the natural terrain on Valero side?

10. The Arcadis Memo is presented as a technical memo by paid consultants of Valero, and is relied by Valero and even City staff as rebuttal to previously raised questions about the project. These consultants present these finding as "Arcadis' professional opinion" at bottom of page 2 when they conclude that "it is Arcadis' professional opinion that the proposed project meets the requirements and intent of the City of Benicia's stream setback ordinance". There are multiple problems with this assertion, namely:
 1. This "professional" opinion memo is not signed or stamped by a licensed professional in the state of California.
 2. Actually I have checked the two authors of the memo, they are not licensed as engineers or land surveyors in California. I am not sure if they are accredited as any other type of official California licensed professional.
 3. Mr. ALEX Francisco appears to have a BA and Masters in biology and environmental management and may have some certification from a non-governmental non-state organization in the state of Illinois. There was no resume attached to the memo to establish his credentials.
 4. For Mr. Josh Gravenmier, I could not find any professional license or even university degrees. There was no resume attached to the memo to establish his credentials.
 5. I note that it is against State of California Professional Engineers Acts rules and regulation to practice engineering and/or render professional opinion as such. The authors did not claim to be engineers, but still claimed to be "Professional". This does not sound right. I am sure Arcadis being a large international Civil/Environmental engineering firm with two offices in the Bay area could find a licensed professional (preferably engineer) to review and sign/stamp this memo.
11. Arcadis erroneously references section 17.70.340 of Benicia Municipal code where the correct section is actually 15.64.110 Watercourse Protection.
12. Arcadis asserts several personal opinion and presents them as professional recommendation. As discussed above, Arcadis authors are not licensed professional engineer in California (or for that matter in any other state) and their personal opinion and belief is not relevant here.
13. I had previously submitted (on April 6 of this year) city of Santa Rosa's (which is close by and more relevant city in contrast to New York) rules and sketches regarding set backs to clarify the issue and its requirements (I have attached them again to this document for ease of reference). Arcadis authors of the present memo have decided not to use that and instead are using part of New York regulations.
14. Arcadis mis-understands and mis-applies even the New York regulation. New York regulation defines top of bank as no farther than 50 feet from MHWL, and only for slopes steeper than 45 degrees uses the first definable break in slope. Therefore, for slopes less steep than 45 degrees, you should use 50 feet from MHWL line for new york and by analogy 100 year flood level for Sulfur Spring, and not what Arcadis erroneously used (first definable break in slope).

MEMO

To:
Diane Sinclair, Valero

Copies:
Elaine Pisu, Valero
Greg Sanders, Nossaman

Arcadis U.S., Inc.
2999 Oak Road
Suite 300
Walnut Creek
California 94597
Tel 925 274 1100
Fax 925 274 1103

From:

Alex Francisco

Ecologist, registered by a private (non-city, non-state, or non-federal) organization in Illinois (Society of Wetland Scientists [established 1994] Professional Certification Program for \$300 + \$75 yearly. Master of Environmental Management, DUKE 1998-2000 and BA of Biology William & Mary 1992-1996

Josh Gravenmier

Vice President, Manager Incident Response and Recovery Services at ARCADIS. Work since 2002.
No education listed. No Certification listed

Date:

September 13, 2016

Both authors of this report are not licensed as civil engineer, architect, or land surveyor in California
[http://www2.dca.ca.gov/pls/wllpub/wllqryna\\$lcev2.startup?p_qte_code=ENG&p_qte_pgm_code=7500](http://www2.dca.ca.gov/pls/wllpub/wllqryna$lcev2.startup?p_qte_code=ENG&p_qte_pgm_code=7500)

Subject:

Valero Crude by Rail Project Sulfur Springs Setback

How come this professional Opinion Memo written by an engineering company hired by Valero to respond officially to questions raised about Valero's important project that is subject of dispute is not signed and stamped by a professional engineer in the state of California?

At the request of Valero Refining Company-California (Valero), Arcadis U.S., Inc. (Arcadis) has prepared this memorandum to discuss how the City of Benicia's stream setback municipal ordinance may potentially affect implementation of the Crude by Rail project (project) at Valero's Benicia refinery (Refinery). The City of Benicia (City) Municipal Code Section 17.70.340 states...

"All development shall be set back a minimum of 25 feet from the top of the bank of streams (both seasonal and perennial) and ravines. No development shall be permitted within the setback."

Therefore, in the absence of a variance, construction associated with the project would need to be setback 25 feet from the top of bank of Sulfur Springs Creek on the eastern boundary of the Refinery. Benicia Municipal Code Section 17.70.340 defines "top of bank" as...

This definition is actually from 15.64.110 Watercourse Protection, and Arcadis erroneously refers to the wrong section

"the flatter of the actual top of bank or a projected top of bank from the toe of slope at two horizontal to one vertical bank slope"

Due to the circular definition of "actual top of bank" in the City of Benicia Municipal Code, one must consider a more standardized definition of top of bank to evaluate compliance with the City's stream setback municipal code. Unfortunately, top of bank is not a physical feature for which regulatory technical guidance typically exists to help define the top of bank feature in the field, and top of bank is often defined in the context under which an activity is being regulated. However, top of bank is generally understood to be the first break in slope at an elevation higher than the ordinary mean high water elevation of a stream.

No. This assertion by Arcadis is not a fact, in the sense of "ordinarily mean". Arcadis uses an environmental code section from New York. But we do not have to across the continent to go to New York for to find a definition for cases similar to us. I had previously presented to the City of Benicia the local Santa Rosa regulations, which I hope we can all agree is more likely to be appropriate for Benicia than N.Y. I have attached it here again for ease of reference and comparison.

Arcadis mis-understands and mis-applies even the New York regulation. New York regulation defines top of bank as no farther than 50 feet from MHWL, and for slopes steeper than 45 degrees gives the first definable break in slope. Therefore, for slopes less steep than 45 degrees, you should use 50 feet from MHWL line for new york and by analogy 100 year flood level for Sulfur Spring.

See my argument later on regarding the 100 year flood levels as is required by another similar, and close California town (Santa Rosa). Arcadis assertion of what is "generally defined" is just an assertion and not a professional opinion by a California licensed architect or civil engineer.

In other words, the top of bank is generally defined as the location above the active stream channel where the slope topography flattens. An example of a theoretical top of bank, as defined under the New York State Department of Environmental Conservation (NYSDEC) regulatory context, is presented in Figure 1.

As depicted in Figure 1 the top of bank under NYSDEC is defined as the first definable break in slope, but also is defined through a regulatory context (i.e., 50 feet from the mean high water line in instances where the grade is uniform and less than 45 degrees).

NO

For the purposes of evaluating the Valero Refinery project for compliance with the City of Benicia stream setback ordinance, Arcadis considers the "actual top of bank" to be the location of the first break in slope above the elevation of the ordinary high water elevation (i.e., the first break in slope at an elevation higher than the elevation of the primary channel forming flow), as depicted on the cross-sections provided to Arcadis by Valero. None of the ten provided cross-sections indicate that the "top of bank would occur at a further horizontal distance from Sulfur Springs Creek if using the City of Benicia regulatory context definition (i.e., "projected top of bank from the toe of slope at two horizontal to one vertical bank slope").

Here Arcadis is actually writing code, since for slopes less than 45 degrees this is not the rule. And just saying Arcadis considers does not make it true.

Attachment 1 of this memorandum presents the estimated distance (depicted in inches) (300 inches or 25 feet) between the current Sulphur Springs Creek top of bank and the Refinery fence line. Since the cross sections do not contain a scale, the distances must be considered estimates for final delineation of the distance from the top of the bank. Additional setback distances could be added to those identified based on the proposed development locations (i.e., rail line or unloading rack). This evaluation is summarized in the bullets below.

This is personal opinion and interpretation of Arcadis and since the authors of this memo are not licensed professional engineers or architect in California their personal beliefs are not relevant

- Cross-sections 1, 2, 3, 4, 5, 7, 8, and 9 indicate that the Sulphur Springs Creek top of bank is more than 25 feet from the existing Valero Refinery fence line and more than 25 feet from the proposed new holding track.
- Cross-section 6, beyond the area of the offloading rack, indicates that the Sulphur Springs Creek top of bank is less than 25 feet (i.e., approximately 23.3 feet [280.06 inches]) from the Valero Refinery existing fence line and more than 25 feet from the proposed new holding track.
- Cross-section 10, beyond the area of the offloading rack, indicates that the Sulphur Springs Creek top of bank is less than 25 feet (i.e., approximately 23.5 feet [283.63 inches]) from the Valero Refinery existing fence line and more than 25 feet from the proposed new holding track.

Stream setback ordinances are typically promulgated to either provide a buffer across which non-point source pollutants can attenuate prior to entering the stream channel or to provide a buffer for the stream floodplain in which development will not occur. The estimates provided above of the distance from the Sulfur Springs top of bank provide an estimate to maintain a buffer to reduce non-point source pollutant impacts. Current information is not available to establish the return frequency flood zones for Sulfur Springs Creek or historical elevations of the top of bank relative to the current configuration. However, based on the elevation information provided in the cross-sections (Attachment 1) and FEMA Maps (Attachment 2) potential flooding of Springs Creek would not occur on the west side near the refinery, but would occur to the east of the Refinery. This is due to the higher elevation of the Sulfur Springs Creek berms on the western Refinery boundary when compared to the adjacent land to the east of Sulfur Springs Creek. Therefore, the proposed project activities are outside of the Sulfur Springs creek initial flood zone.

Based on the evaluations above and the information attached, it is Arcadis' professional opinion that the proposed project meets the requirements and intent of the City of Benicia's stream setback ordinance

As what type of officially licensed California professional do you express this "professional opinion"?

See my discussion of Flood Zone and apparent raising of finish grade on Valero's side and whether there is a record of that and if that was properly reviewed.

MEMO

regarding development. Please feel free to contact Alex Francisco (925.296.7824) or Josh Gravenmier (925.296.7858) if you have questions regarding the information provided in this memorandum.

This is presented as a technical memo by paid consultants of Valero. These consultants present these findings as "Arcadis' professional opinion" at bottom of page 2 when they conclude that "it is Arcadis' professional opinion that the proposed project meets the requirements and intent of the City of Benicia's stream setback ordinance". There are multiple problems with this assertion, namely:

1. This "professional" opinion memo is not signed or stamped by a licensed professional in the state of California.
2. Actually I have checked the two authors of the memo, they are not licensed as engineers or land surveyors in California. I am not sure if they are accredited as any type of official state licensed professional.
3. Mr. Alex Francisco appears to have a BA and Masters in biology and environmental management and may have some certification from a non-governmental non-state entity in the state of Illinois.
4. For Mr. Josh Gravenmier, I could not find any professional license or even university degrees.
5. We note that it is against State of California Professional Engineers Acts rules and regulation to practice engineering and/or render professional opinion as such. The authors did not claim to be engineers, but still claimed to be "Professional". This does not sound right. I am sure Arcadis being a large international Civil/Environmental engineering firm with two offices in the Bay area could find a licensed professional (preferably engineer) to review and sign this memo.

15.64.110 Watercourse protection.

A. Every person owning property through which a watercourse passes, or such person's lessee or tenant, shall keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation, and other obstacles which would pollute, contaminate, or significantly retard the flow of water through the watercourse; shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse; and shall not remove healthy bank vegetation beyond that actually necessary for maintenance, and not remove vegetation in such a manner as to increase the vulnerability of the watercourse to erosion.

B. No person shall commit or cause to be committed any of the following acts, unless a written permit has first been obtained from the city engineer:

1. Discharge into or connect any pipe or channel to a watercourse;
2. Modify the natural flow of water in a watercourse;
3. **Carry out development within the greater of 30 feet of the center line of any creek or 25 feet of the top of a bank wherein the "top of bank" is defined as the flatter of the actual top of bank or a projected top of bank from the toe of slope at two horizontal to one vertical bank slope;**
4. Deposit in, plant in, or remove any material from a watercourse including its banks, except as required for necessary maintenance;
5. Construct, alter, enlarge, connect to, change, or remove any structure in a watercourse; or
6. Place any loose or unconsolidated material along the side of or within a watercourse or so close to the side as to cause a diversion of the flow, or to cause a probability of such material being carried away by storm water passing through such watercourse. (Ord. 15-01 § 1; Ord. 06-14 § 1).

15.64.120 Authority to inspect.

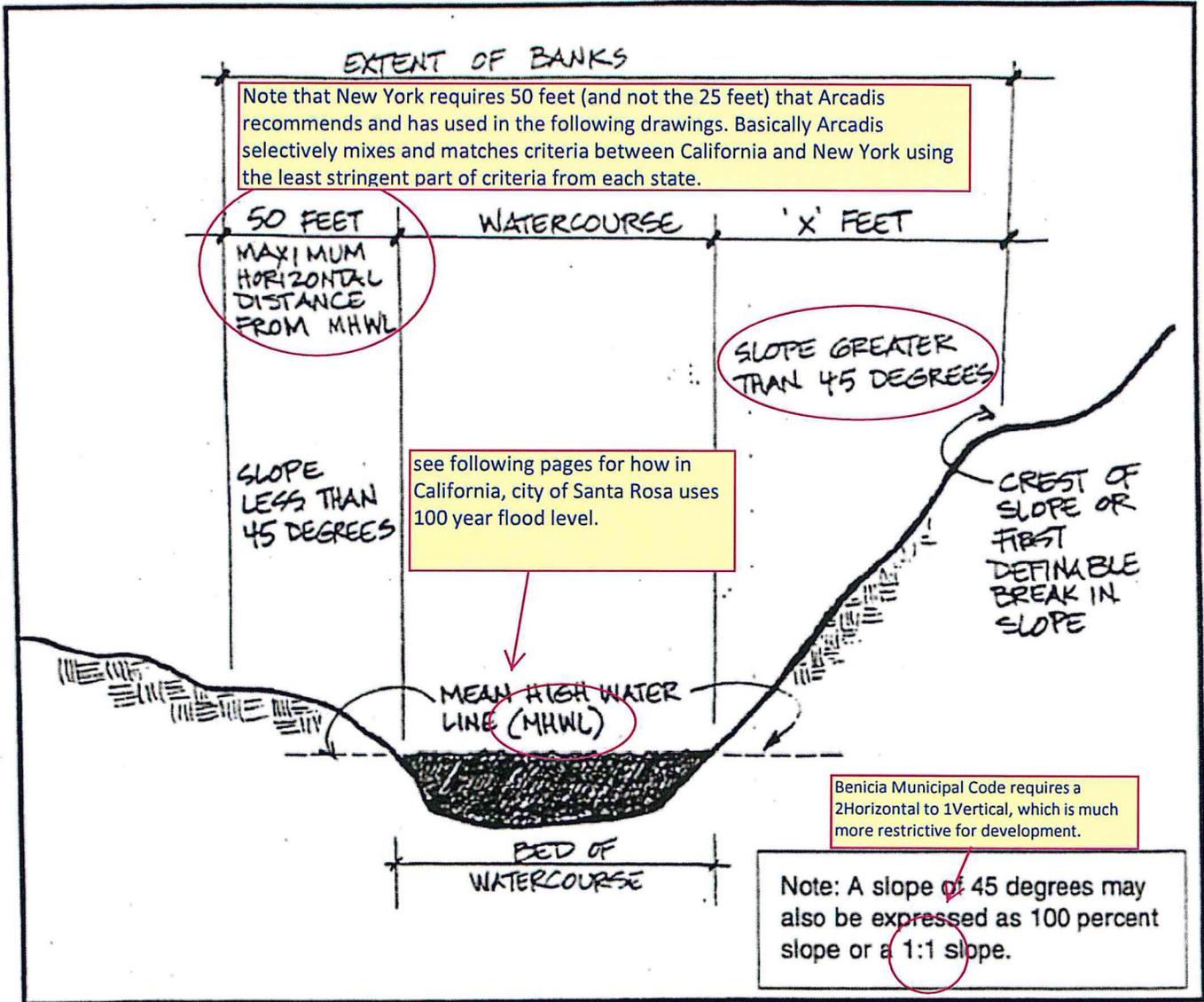
17.70.340 Stream setbacks.

All development shall be set back a minimum of 25 feet from the top of the bank of streams (both seasonal and perennial) and ravines. No development shall be permitted within the setback. (Ord. 01-6 N.S., 2001).

17.70.350 Formula businesses.

FIGURE





Banks means that land area immediately adjacent to and which slopes toward the bed of a watercourse and which is necessary to maintain the integrity of a watercourse. A bank will not be considered to extend more than 50 feet horizontally from the mean high water line, with the following exception: Where a generally uniform slope of 45 degrees (100%) or greater adjoins the bed of the watercourse, the bank is extended to the crest of the slope or the first definable break in slope, either a natural or constructed (i.e., road or railroad grade) feature, lying generally parallel to the watercourse.

This footnote was missing from Arcadis Report

Example Stream Bank Illustration
 Source: New York Department of Environmental Conservation
<http://www.dec.ny.gov/permits/70947.html>

Santa Rosa City Code

Up Previous Next Main Search Print No Frames

Title 20 ZONING

Division 3 Site Planning and General Development Regulations

Chapter 20-30 STANDARDS FOR ALL DEVELOPMENT AND LAND USES

20-30.040 Creekside development.

- A. Purpose. This Section requires minimum setbacks from waterways for new structures, to provide reasonable protection to owners of riparian property and the public from the hazards of stream bank failures and flooding, while allowing owners of property near waterways reasonable use of and the opportunity to improve their properties consistent with general safety.
- B. Applicability. No structure, including buildings of any type, swimming pools, including prefabricated swimming pools, driveways, streets, parking areas, patios, platforms, decks, fences, liquid storage tanks, mobile homes, broken concrete rubble, earth fill or other structural debris fill, or retaining walls, shall be placed within the creekside setbacks required by this Section.
1. Existing structures. An existing, lawfully constructed structure that is located within a setback required by this Section is subject to the requirements for nonconforming structures in Chapter 20-61 (Nonconforming Uses, Structures, and Parcels).
 2. Exceptions. This Section shall not apply to:
Storm drainage, erosion control, and creekbank stability improvements that have been approved as required by law by the governmental agencies having jurisdiction over them.
 3. Design guidelines. See also Section 4.4 (Creeks, Riparian Corridors, and Storm Drainage) of the City's Design Guidelines.
- C. Definitions. Definitions of the technical terms and phrases used in this Section may be found in Division 7 (Glossary), under "Waterway."
- D. Creekside setback requirements.
1. Waterway with defined bank. The exterior boundary of the setback area on each side of a natural or modified natural waterway shall be 50 feet from the top of the highest bank on that side of the waterway, as determined by the Director. When the bank of a natural or modified natural waterway is steeper than 2.5:1, the exterior setback boundary shall be measured by the projections of a slope of 2.5:1 from the toe of the stream bank to ground level, plus 50 feet. See Figure 3-1.
 2. Waterway without defined bank. The exterior boundary of the setback area adjacent to the side of a natural or modified natural waterway, where the top of the stream bank is not defined, shall be 50 feet, measured horizontally, from the established 100-year storm freeboard level. See Figure 3-2.

Please note that in California due to earthquakes and other concerns cities like Santa Rosa, where this regulation is copied from, measure top of water based on 100-year storm freeboard level and not what Arcadis consultants recommend per New York

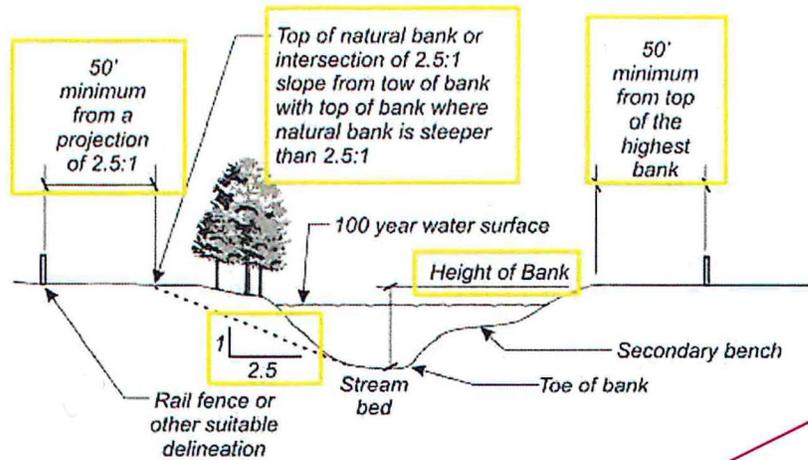


Figure 3-1 – Setback with defined bank (see exceptions Section 20-30.040.D.4.)

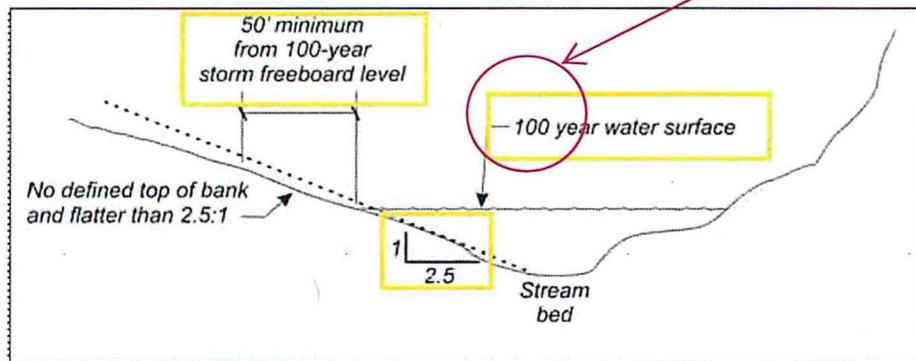


Figure 3-2 – Setback without defined bank (see exceptions Section 20-30.040.D.4.)

3. Channelized waterway. Where a fully channelized waterway exists and the channel is owned by, or under the control of the Sonoma County Water Agency, structures may be closer to the top of the bank than a distance of 2.5 times the depth of the bank plus 50 feet, provided that this encroachment into the setback area will not obstruct or impair the channel’s hydraulic functions, impede Water Agency access or maintenance of the channel, or impair the stability of the slope, bank, or maintenance of the channel, or impair the stability of the slope, bank, or creekbed fountain, all as determined by and approved by the Department, the Public Work Department, and the Sonoma County Water Agency.

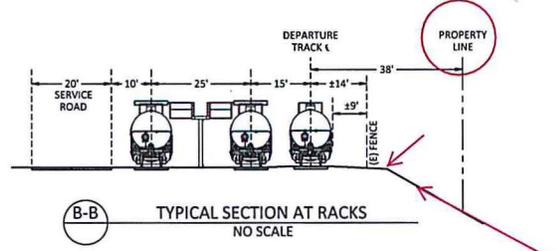
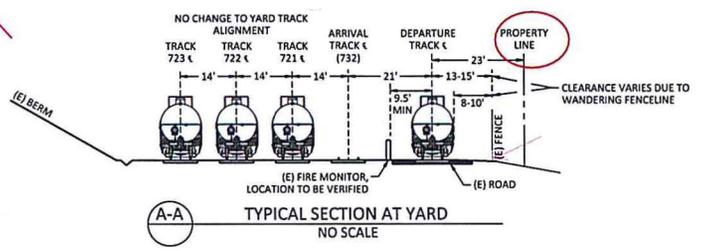
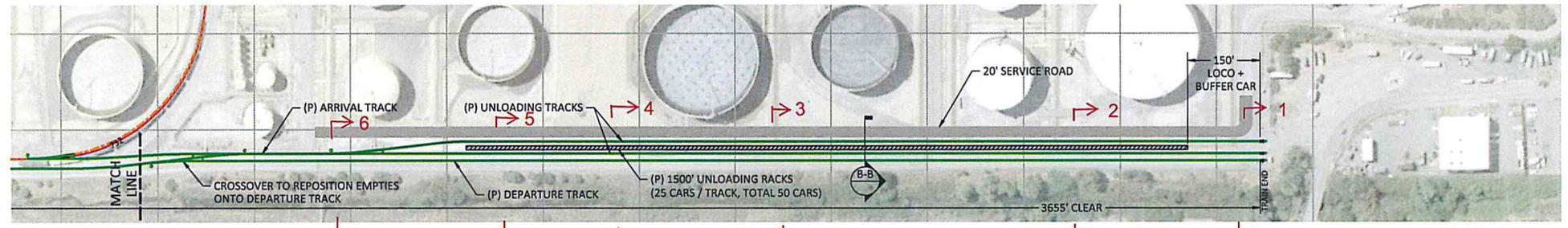
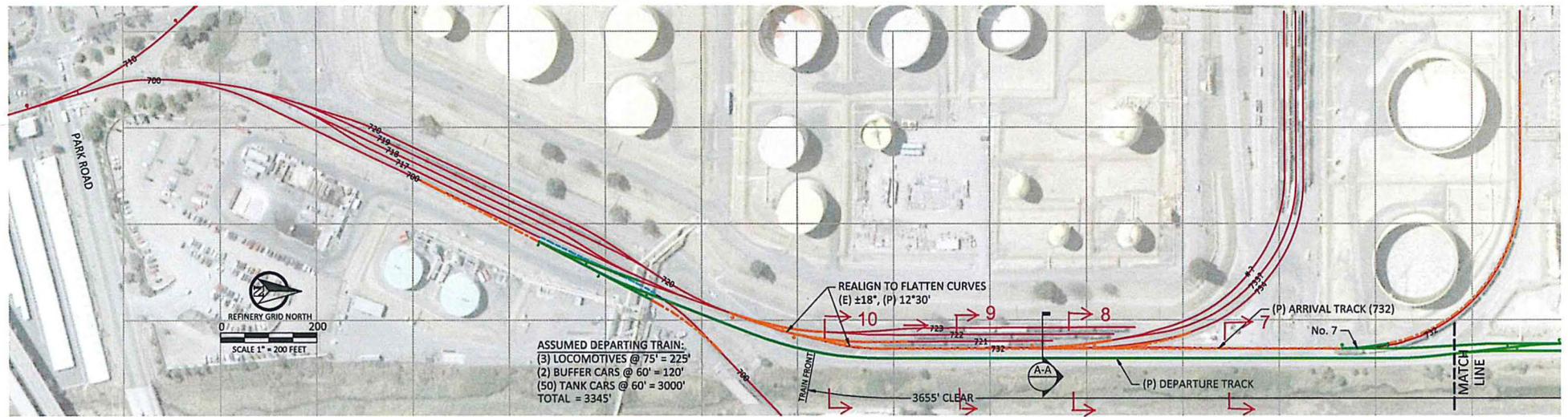
4. Exceptions.

- a. The setbacks required in Section 20-30.040 shall be 30 feet for existing properties or adjacent areas within the City that were developed in compliance with applicable setback requirements in effect prior to September 3, 2004.
- b. The setbacks required in Section 20-30.040 shall be 30 feet for new development that is surrounded by existing structures that were developed in compliance with applicable setback requirements in effect prior to September 3, 2004.

E. Bridges and utilities within setback areas. Bridges for motor vehicles, pedestrians, and/or bicycles, and/or public utility infrastructure may cross through a waterway setback area and over or under its channel, provided that the installation has received all required approvals from the City. “Bridges” as used in this Subsection includes the segments of the street connecting with the ends of the bridge and the use of

ATTACHMENT 1





- NOTES**
1. PROPOSED CURVES 12°30' MAX UNLESS NOTED.
 2. PROPOSED TURNOUTS No. 9 UNLESS NOTED.
 3. TRACK CAPACITY ASSUMES RAILCAR LENGTH OF 60'.
 4. ADDITIONAL SURVEY REQUIRED TO CONFIRM ALIGNMENT BETWEEN TRACK 700 TIE-IN AND CROSSOVER.
- LEGEND**
- Existing Siding Track
 - Proposed Industry Track
 - Track to be Shifted
 - Track to be Removed

FOR DISCUSSION PURPOSES ONLY NOT FOR CONSTRUCTION

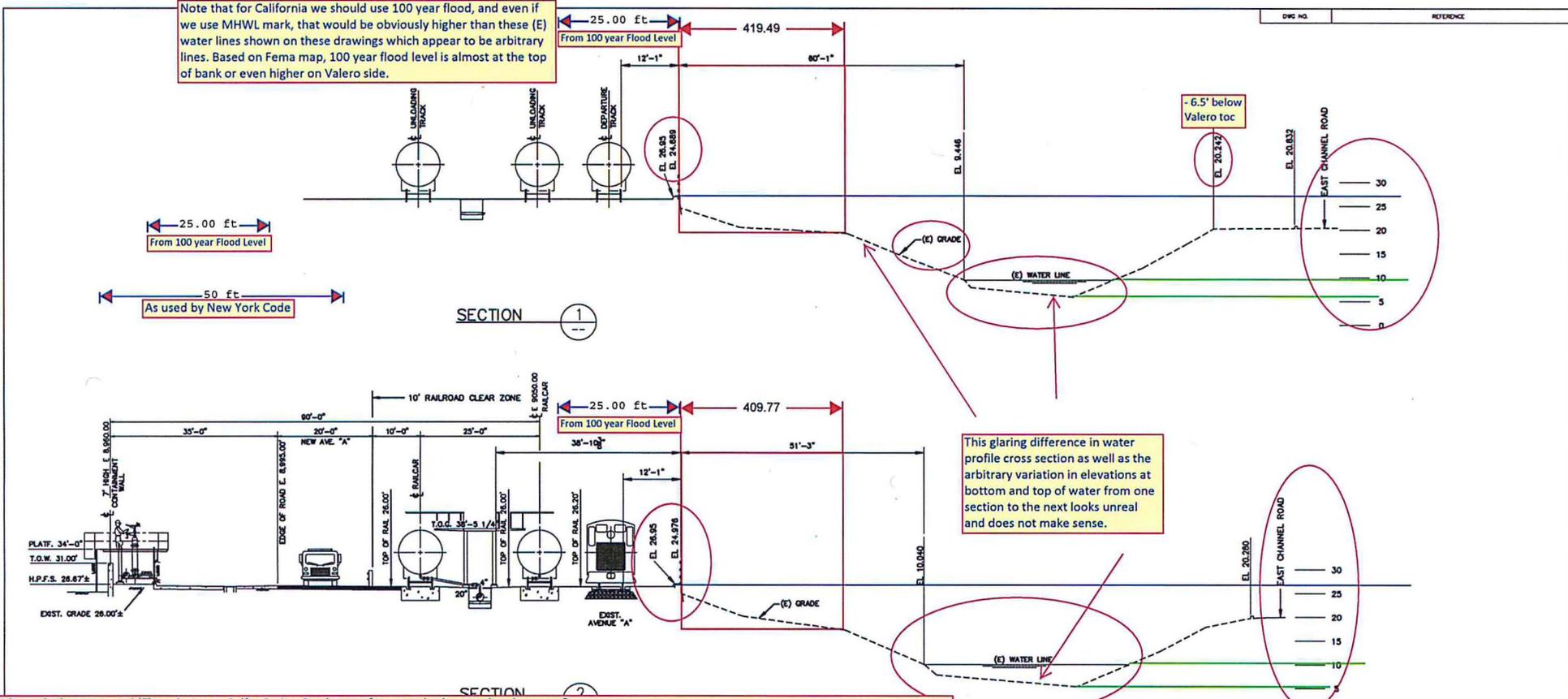


VALERO ENERGY CORPORATION
CRUDE UNLOADING TRACKS
BENICIA, CA
 FEBRUARY 18, 2013 PAGE 1 OF 1



Note that for California we should use 100 year flood, and even if we use MHWL mark, that would be obviously higher than these (E) water lines shown on these drawings which appear to be arbitrary lines. Based on Fema map, 100 year flood level is almost at the top of bank or even higher on Valero side.

DWG NO. REFERENCE



1. Who and when surveyed (E) grade across Sulfur Spring Creek, even for ground submerged under water?
2. Who and when surveyed (E) water elevation (this represents water level in which season, obviously it is not MHWL needed by Arcadis).
3. Who and when surveyed Finish Grade on Valero and across creek.
4. Why (E) grade on Valero side is not shown so that we see how much they are raising the grade on their side?
5. Where is the stamp and signature of surveyors and civil engineers.
6. Why these important data are being shown for the first time now in September 2016 and not in 2013 and why they are still called "STUDY"?
7. Why the City has accepted substandard drawings in 2013 with incomplete data for such an important, critical, and large project?
8. Why the City has accepted so much additional information after public review and discussion on the original permit has ended?
9. Why the City accepts drawings and engineering data from paid consultants of an applicant without their engineers name and stamp being shown on the drawing?
10. The City staff and concerned citizens that follow these proceedings are being treated badly by Valero, since we are spending considerable amount of time and effort reviewing incomplete and improperly prepared documents, and unlike corporations we do not get to deduct these from our taxes as cost of doing business.
11. Based on FEMA flood map 634 dated 1/12/2015 Valero Avenue A is fully to partially flooded and is in Regulatory Floodway Zone, also some historical photos show the Sulfur Spring banks to be at about the same elevation on north and south sides. Moreover, Valero existing finish grade looks unnaturally much higher than the grade across the creek (east channel road) in sections 1 through 8 compared to sections 9 and 10 and this appears to suggest that the refinery site has been raised artificially to make that property more useful and less prone to flood damage and consequently more valuable. But this has not been a win-win situation for the properties on the other side of the creek and even downstream from the site. As a result of regrading, their properties have been adversely affected for being on the lower and therefore losing side. They have become more prone to flood damage which would reduce their property values, increase their flood insurance rates, and increase risks of injury and damage. Such changes to grading and drainage of a flood plain zone are serious matter and should have been reviewed and approved by the City and reported to other state agencies as well. Where are the records of this important change to the natural terrain?

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	BY	CHKD
B	8-9-18	ISSUED FOR REVIEW		

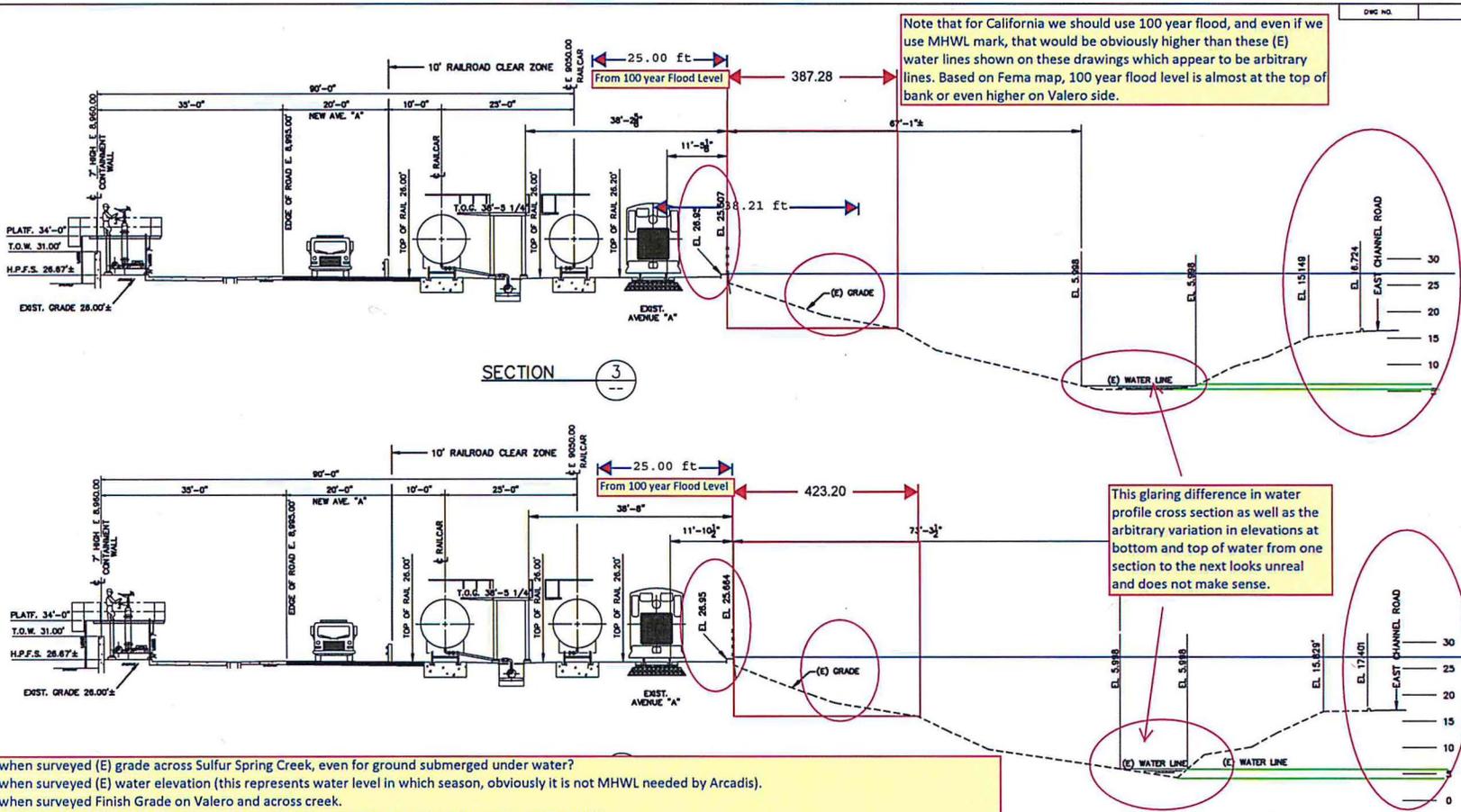
DATE	DESCRIPTION	BY	CHKD
8-30-18	FOR APPROVAL - PHASE		
8-30-18			

VALERO REFINING COMPANY-CALIFORNIA
BENICIA REFINERY

TANKAGE AREA 000 UNIT 32 CIVIL

CRUDE BY RAIL
SULFUR SPRINGS CREEK-SECTIONS

SCALE AS NOTED DRAWING NO. STUDY - SHEET 3 REVISION B



Note that for California we should use 100 year flood, and even if we use MHWL mark, that would be obviously higher than these (E) water lines shown on these drawings which appear to be arbitrary lines. Based on Fema map, 100 year flood level is almost at the top of bank or even higher on Valero side.

This glaring difference in water profile cross section as well as the arbitrary variation in elevations at bottom and top of water from one section to the next looks unreal and does not make sense.

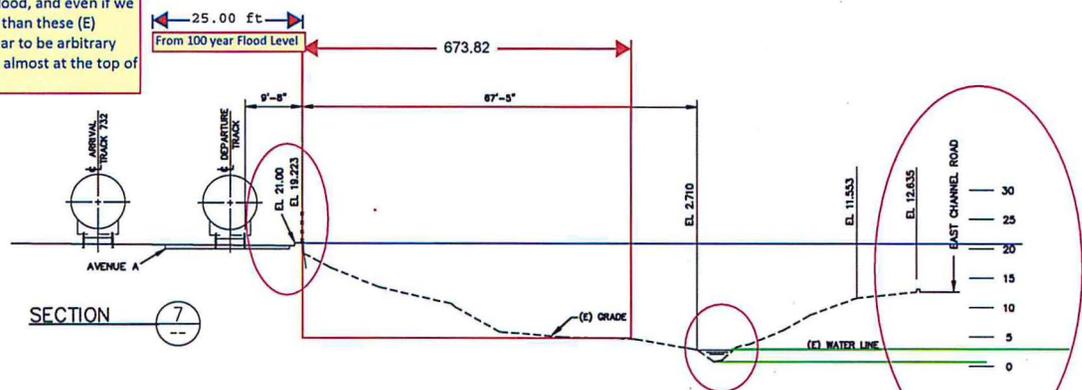
1. Who and when surveyed (E) grade across Sulfur Spring Creek, even for ground submerged under water?
2. Who and when surveyed (E) water elevation (this represents water level in which season, obviously it is not MHWL needed by Arcadis).
3. Who and when surveyed Finish Grade on Valero and across creek.
4. Why (E) grade on Valero side is not shown so that we see how much they are raising the grade on their side?
5. Where is the stamp and signature of surveyors and civil engineers.
6. Why these important data are being shown for the first time now in September 2016 and not in 2013 and why they are still called "STUDY"?
7. Why the City has accepted substandard drawings in 2013 with incomplete data for such an important, critical, and large project?
8. Why the City has accepted so much additional information after public review and discussion on the original permit has ended?
9. Why the City accepts drawings and engineering data from paid consultants of an applicant without their engineers name and stamp being shown on the drawing?
10. The City staff and concerned citizens that follow these proceedings are being treated badly by Valero, since we are spending considerable amount of time and effort reviewing incomplete and improperly prepared documents, and unlike corporations we do not get to deduct these from our taxes as cost of doing business.
11. Based on FEMA flood map 634 dated 1/12/2015 Valero Avenue A is fully to partially flooded and is in Regulatory Floodway Zone, also some historical photos show the Sulfur Spring banks to be at about the same elevation on north and south sides. Moreover, Valero existing finish grade looks unnaturally much higher than the grade across the creek (east channel road) in sections 1 through 8 compared to sections 9 and 10 and this appears to suggest that the refinery site has been raised artificially to make that property more useful and less prone to flood damage and consequently more valuable. But this has not been a win-win situation for the properties on the other side of the creek and even downstream from the site. As a result of regrading, their properties have been adversely affected for being on the lower and therefore loosing side. They have become more prone to flood damage which would reduce their property values, increase their flood insurance rates, and increase risks of injury and damage. Such changes to grading and drainage of a flood plain zone are serious matter and should have been reviewed and approved by the City and reported to other state agencies as well. Where are the records of this important change to the natural terrain?

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

DWG NO.	REFERENCE
---------	-----------

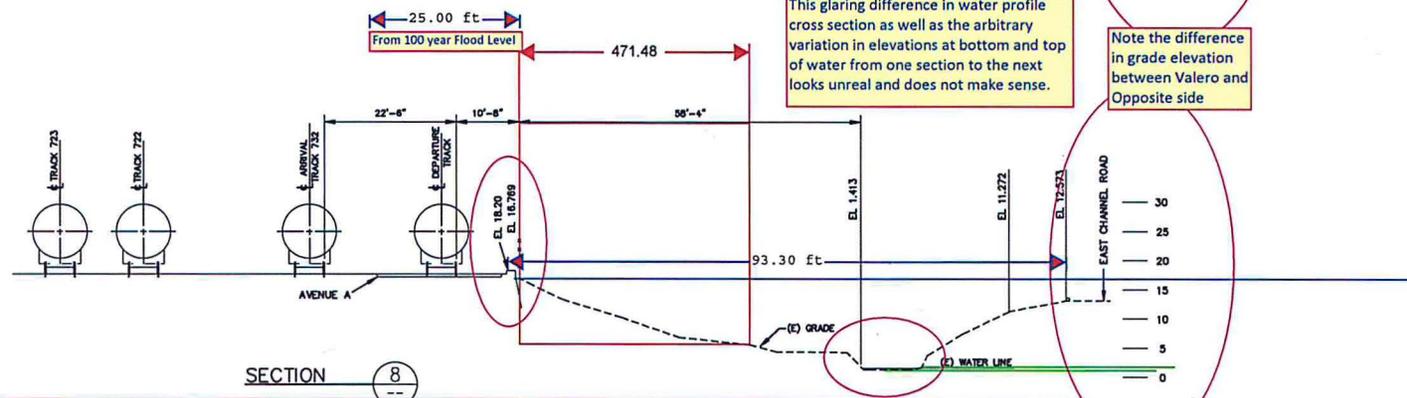
B		9-9-16		ISSUED FOR REVIEW		KH	
REV	DATE	DESCRIPTION				BY	CHK
REVISION RECORD							
REV	DATE	DESCRIPTION				APP	CHK
01	08-18-16	FOR INFORMATION - PHONE				APP	CHK
02	08-19-16					APP	CHK
03						APP	CHK
04						APP	CHK
VALERO REFINING COMPANY-CALIFORNIA BENICIA REFINERY							
TANKAGE AREA 000		CRUDE BY RAIL				UNIT 32	
		SULFUR SPRINGS CREEK-SECTIONS				DWG	
SCALE	AS NOTED	DRAWING NO.	STUDY - SHEET 4		REVISION	B	
DATE	8-19-16						

Note that for California we should use 100 year flood, and even if we use MHWL mark, that would be obviously higher than these (E) water lines shown on these drawings which appear to be arbitrary lines. Based on Fema map, 100 year flood level is almost at the top of bank or even higher on Valero side.



This glaring difference in water profile cross section as well as the arbitrary variation in elevations at bottom and top of water from one section to the next looks unreal and does not make sense.

Note the difference in grade elevation between Valero and Opposite side

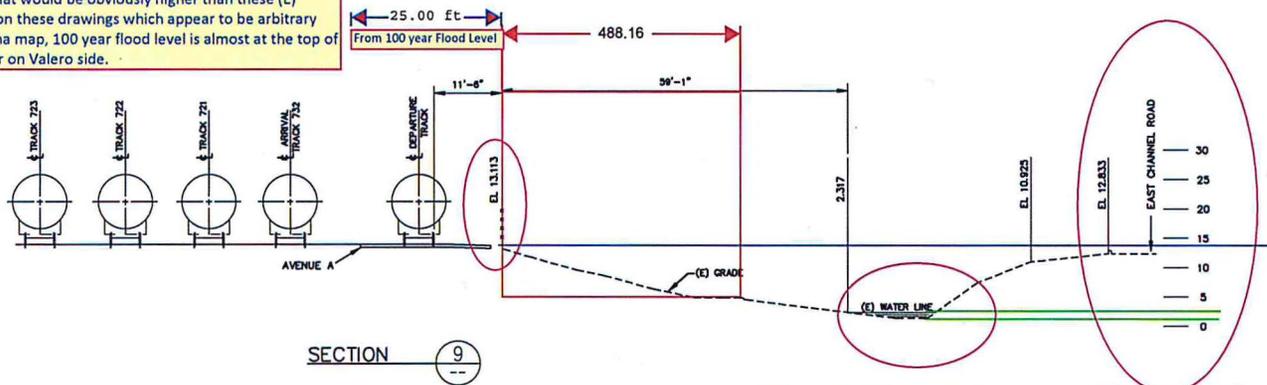


1. Who and when surveyed (E) grade across Sulfur Spring Creek, even for ground submerged under water?
2. Who and when surveyed (E) water elevation (this represents water level in which season, obviously it is not MHWL needed by Arcadis).
3. Who and when surveyed Finish Grade on Valero and across creek.
4. Why (E) grade on Valero side is not shown so that we see how much they are raising the grade on their side?
5. Where is the stamp and signature of surveyors and civil engineers.
6. Why these important data are being shown for the first time now in September 2016 and not in 2013 and why they are still called "STUDY"?
7. Why the City has accepted substandard drawings in 2013 with incomplete data for such an important, critical, and large project?
8. Why the City has accepted so much additional information after public review and discussion on the original permit has ended?
9. Why the City accepts drawings and engineering data from paid consultants of an applicant without their engineers name and stamp being shown on the drawing?
10. The City staff and concerned citizens that follow these proceedings are being treated badly by Valero, since we are spending considerable amount of time and effort reviewing incomplete and improperly prepared documents, and unlike corporations we do not get to deduct these from our taxes as cost of doing business.
11. Based on FEMA flood map 634 dated 1/12/2015 Valero Avenue A is fully to partially flooded and is in Regulatory Floodway Zone, also some historical photos show the Sulfur Spring banks to be at about the same elevation on north and south sides. Moreover, Valero existing finish grade looks unnaturally much higher than the grade across the creek (east channel road) in sections 1 through 8 compared to sections 9 and 10 and this appears to suggest that the refinery site has been raised artificially to make that property more useful and less prone to flood damage and consequently more valuable. But this has not been a win-win situation for the properties on the other side of the creek and even downstream from the site. As a result of regrading, their properties have been adversely affected for being on the lower and therefore loosing side. They have become more prone to flood damage which would reduce their property values, increase their flood insurance rates, and increase risks of injury and damage. Such changes to grading and drainage of a flood plain zone are serious matter and should have been reviewed and approved by the City and reported to other state agencies as well. Where are the records of this important change to the natural terrain?

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	BY	CHKD.
B	9-8-18	ISSUED FOR REVIEW		
REVISION RECORD				
REV.	DATE	DESCRIPTION	BY	CHKD.
001	08-10-18	FOR INFORMATION - PHASE		
002	08-10-18			
003				
004				
VALERO REFINING COMPANY-CALIFORNIA BENICIA REFINERY				
TANKAGE AREA 000			UNIT 32 CIVIL	
CRUDE BY RAIL SULFUR SPRINGS CREEK-SECTIONS				
SCALE	AS NOTED	DRAWING NO.	STUDY - SHEET 6	REVISION
DATE	8-19-18			B

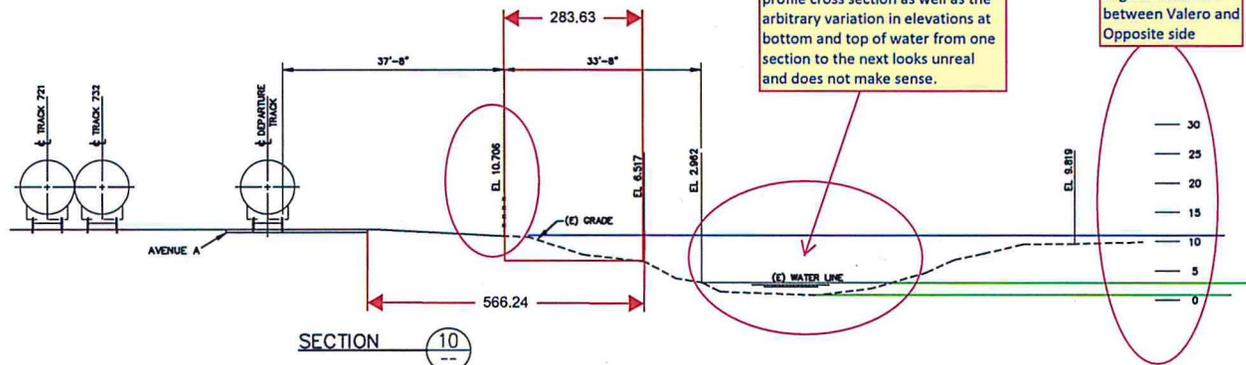
Note that for California we should use 100 year flood, and even if we use MHWL mark, that would be obviously higher than these (E) water lines shown on these drawings which appear to be arbitrary lines. Based on Fema map, 100 year flood level is almost at the top of bank or even higher on Valero side.



SECTION 9

This glaring difference in water profile cross section as well as the arbitrary variation in elevations at bottom and top of water from one section to the next looks unreal and does not make sense.

Note the difference in grade elevation between Valero and Opposite side



SECTION 10

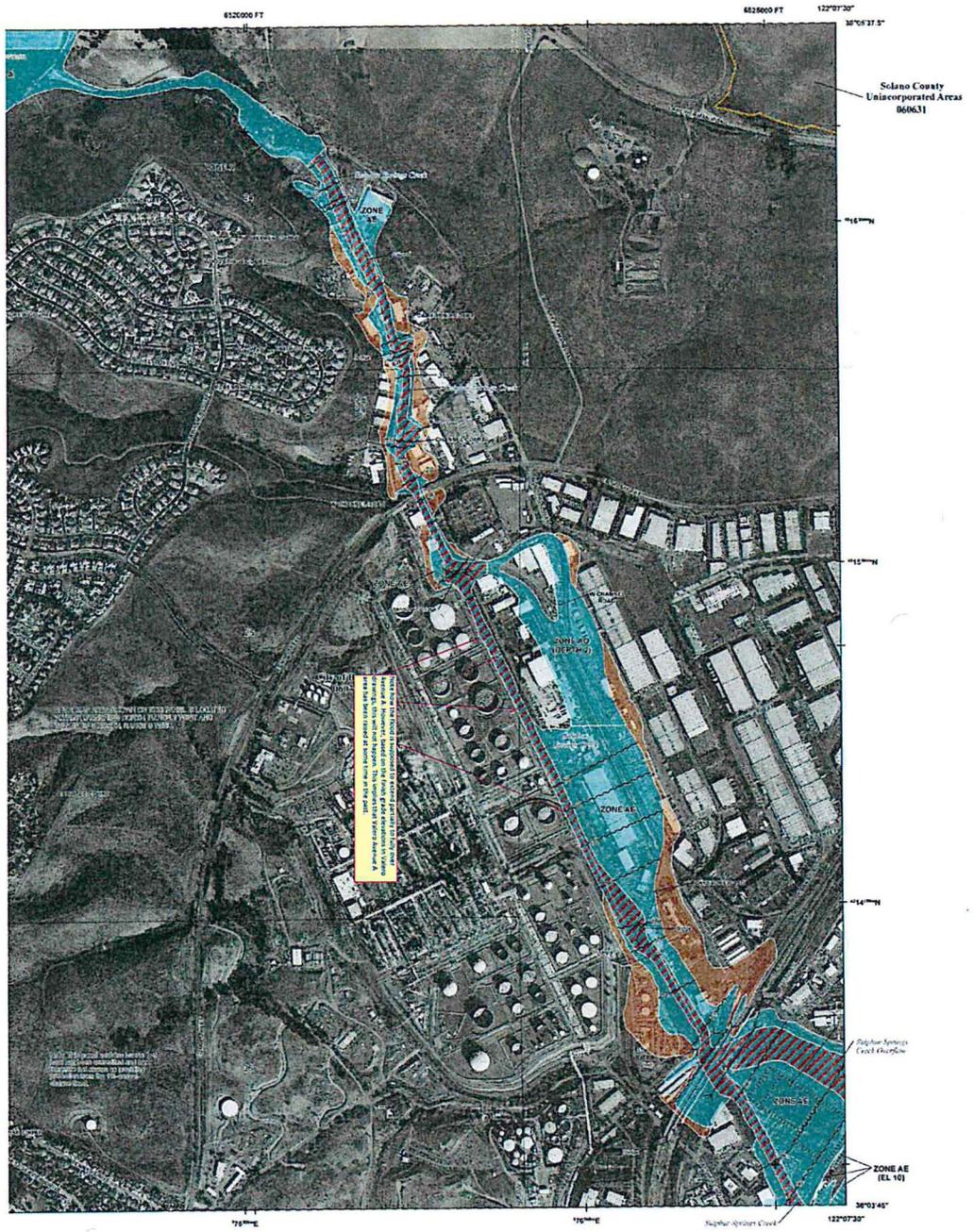
1. Who and when surveyed (E) grade across Sulfur Spring Creek, even for ground submerged under water?
2. Who and when surveyed (E) water elevation (this represents water level in which season, obviously it is not MHWL needed by Arcadis).
3. Who and when surveyed Finish Grade on Valero and across creek.
4. Why (E) grade on Valero side is not shown so that we see how much they are raising the grade on their side?
5. Where is the stamp and signature of surveyors and civil engineers.
6. Why these important data are being shown for the first time now in September 2016 and not in 2013 and why they are still called "STUDY"?
7. Why the City has accepted substandard drawings in 2013 with incomplete data for such an important, critical, and large project?
8. Why the City has accepted so much additional information after public review and discussion on the original permit has ended?
9. Why the City accepts drawings and engineering data from paid consultants of an applicant without their engineers name and stamp being shown on the drawing?
10. The City staff and concerned citizens that follow these proceedings are being treated badly by Valero, since we are spending considerable amount of time and effort reviewing incomplete and improperly prepared documents, and unlike corporations we do not get to deduct these from our taxes as cost of doing business.
11. Based on FEMA flood map 634 dated 1/12/2015 Valero Avenue A is fully to partially flooded and is in Regulatory Floodway Zone, also some historical photos show the Sulfur Spring banks to be at about the same elevation on north and south sides. Moreover, Valero existing finish grade looks unnaturally much higher than the grade across the creek (east channel road) in sections 1 through 8 compared to sections 9 and 10 and this appears to suggest that the refinery site has been raised artificially to make that property more useful and less prone to flood damage and consequently more valuable. But this has not been a win-win situation for the properties on the other side of the creek and even downstream from the site. As a result of regrading, their properties have been adversely affected for being on the lower and therefore loosing side. They have become more prone to flood damage which would reduce their property values, increase their flood insurance rates, and increase risks of injury and damage. Such changes to grading and drainage of a flood plain zone are serious matter and should have been reviewed and approved by the City and reported to other state agencies as well. Where are the records of this important change to the natural terrain?

THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APP'D	CHK'D	DATE
B	9-9-16	ISSUED FOR REVIEW		KN	
REVISION RECORD					
TANKAGE AREA 000					
VALERO REFINING COMPANY-CALIFORNIA BENICIA REFINERY					
CRUDE BY RAIL SULFUR SPRINGS CREEK-SECTIONS					
SCALE	AS NOTED	DRAWING NO.	STUDY - SHEET 7	REVISION	B
DATE	8-19-16				

ATTACHMENT 2





IRM PANEL LAYOUT
REPORTING
FORMAT

ion (BFE)
 F, AQ, AV, VE, AN
 Hazard Areas
 with drainage
 are mile Zone X
 JAF
 risk due to Levee
 Zone X
 of Hazard Zone X
 Sewer
 Accredited
 e or Floodwall
 real Chance
 FD

(BFE)

NOTES TO USERS

For information and questions about this map, see the procedures associated with the FEMA National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) data. For more information, please call the FEMA Map Service Center at 1-877-FEMA-1345 (1-877-366-2243) or visit the FEMA Map Service Center website at <http://www.fema.gov>. The flood insurance map product is a digital map of the United States. Many of these products can be downloaded from the FEMA website. Users may also obtain the digital map data for their area by contacting the FEMA Map Service Center website at <http://www.fema.gov>.

Communication and/or other information may be obtained from the Flood Insurance Study report for the jurisdiction. To determine flood insurance availability for the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-354-7272.

Some map information on this FIRM was derived from Coastal California LHA and Digital Elevation Data 2011. USGS NED 2012 imagery is used to create the map. The Coastal California imagery is provided by the USGS.

