


# The *Michaels* Case

A double blow for design professionals:

- Design Professional Immunity weakened
- Increased standard of care

Terence J. Scanlan

# The project

- ▶ The City of Spokane needed to expand and improve its existing wastewater treatment facility.
  - ▶ Improvements needed to be built while the existing plant remained in operation.
  - ▶ The Engineer was hired to design and oversee construction of substantial new elements to the facility.
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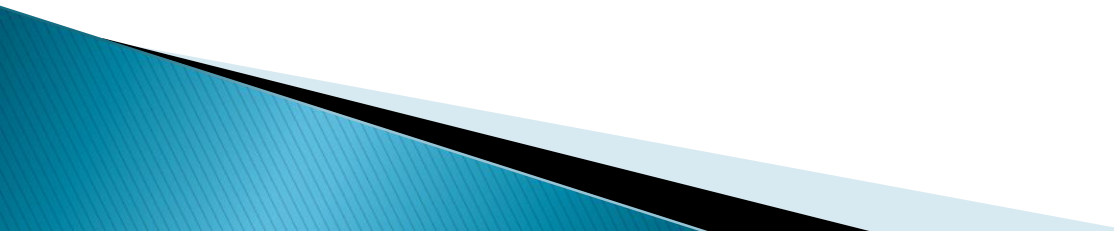


The facility used three anaerobic digesters in phased array.


Routine operations regularly involved both the addition of new sewage coming into the plant as well as the transfer of sludge between the digesters.

The City began to experience difficulties in maintaining high enough temperatures to ensure anaerobic digestions would occur.


# The project

- Engineer under a 10-year contract for design of improvements to Spokane wastewater treatment plant.
  - Engineer was co-located on the project site.
  - Contract provided for discrete “on-call” services regarding operation of the existing plant.
- 


# The accident

- During routine operation of the plant, facility operators over-filled Digester No. 3.
  - A catastrophic failure ensued.
  - The Engineer had no direct role in any aspect of plant operations leading up to the disaster.
  - One worker was killed and two others were seriously injured in digester dome collapse – a lawsuit ensued.
- 

# The lawsuit

- The deceased employee and the two injured employees were barred from suing the City.
  - Instead, they asserted a claim for “negligent design” against the Engineer.
  - Engineer defended in part by asserting it had not “designed” anything, much less done so negligently.
  - Engineer also asserted that it was immune under WA’s Design Professional Immunity statute.
- 

# The accident – how did this happen?

- ▶ The City couldn't figure out how to maintain sufficient temperatures for proper digester performance.
  - ▶ Engineer was asked by the City to consult on digester performance problems.
  - ▶ Engineer attended one “brainstorming” meeting to discuss the problem with senior plant operators/management
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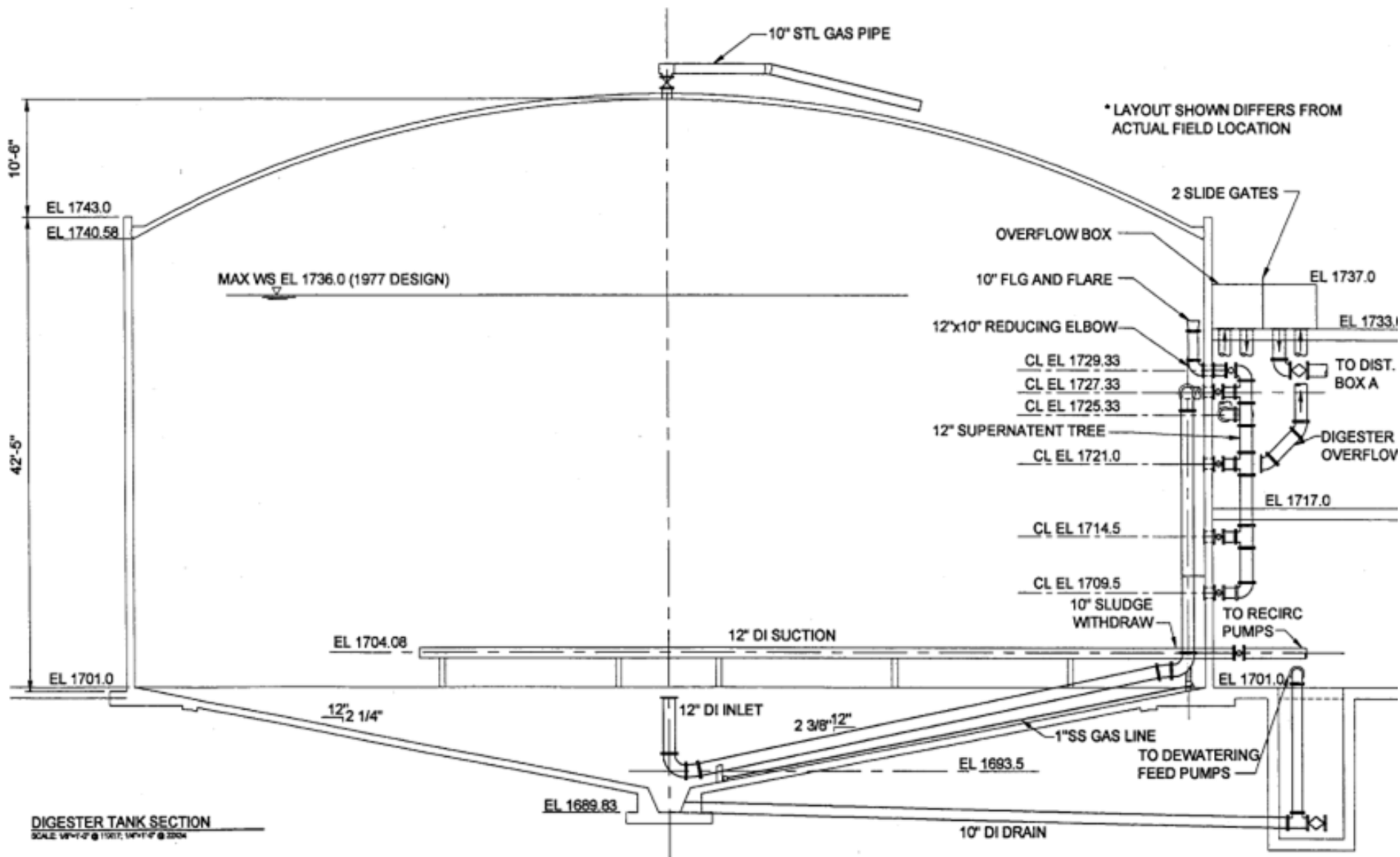




- ▶ Engineer suggested a valving change to redirect flow.
- ▶ The City accepted the concept, but chose to install a “skillet” instead.
- ▶ The City declined Engineer’s offer to evaluate the change to plant operations.

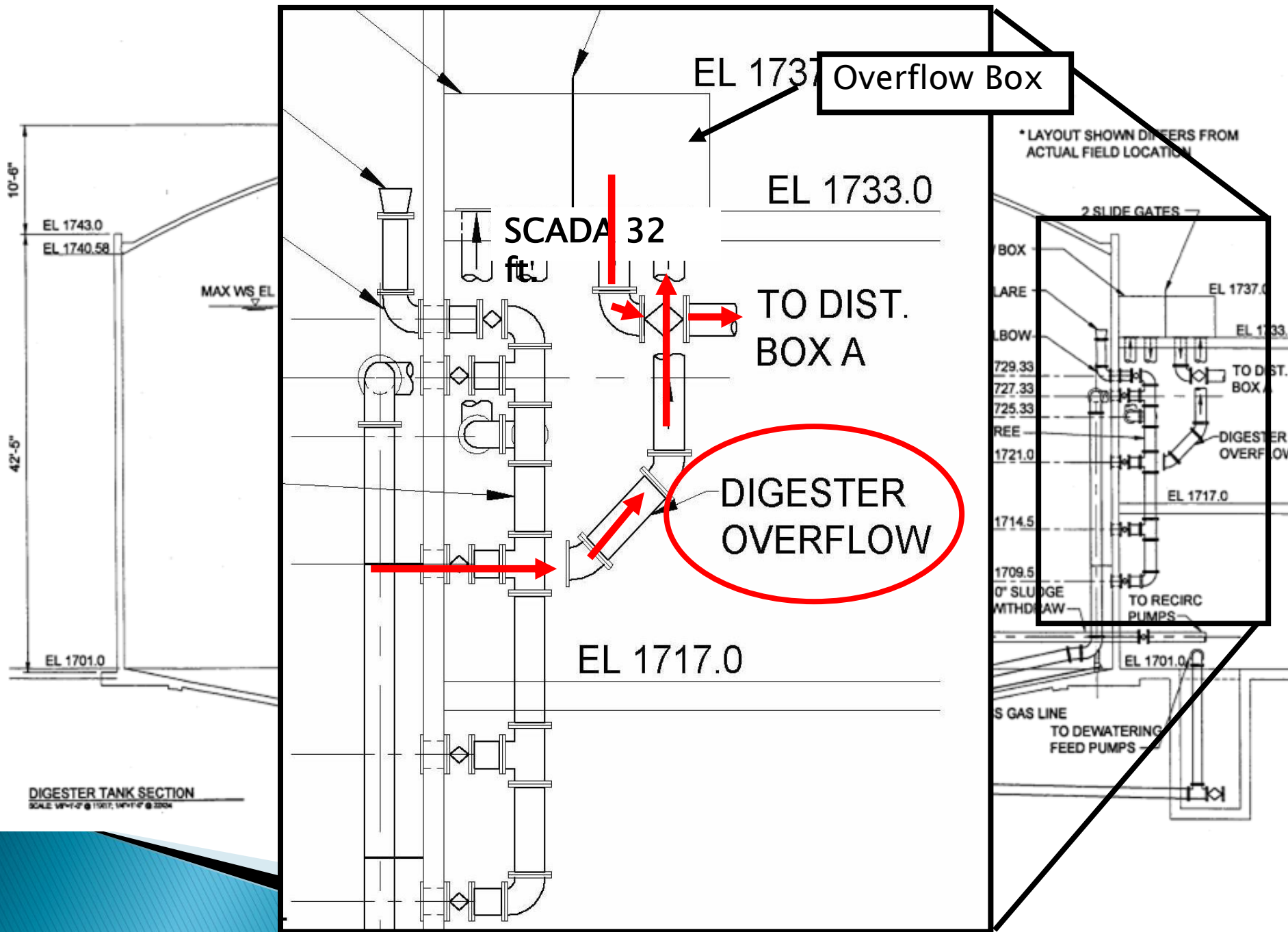


DIG S



DIGESTER TANK SECTION

SCALE: 1/4"=1'-0" (1977); 1/4"=1'-0" (2004)





Overflow Box

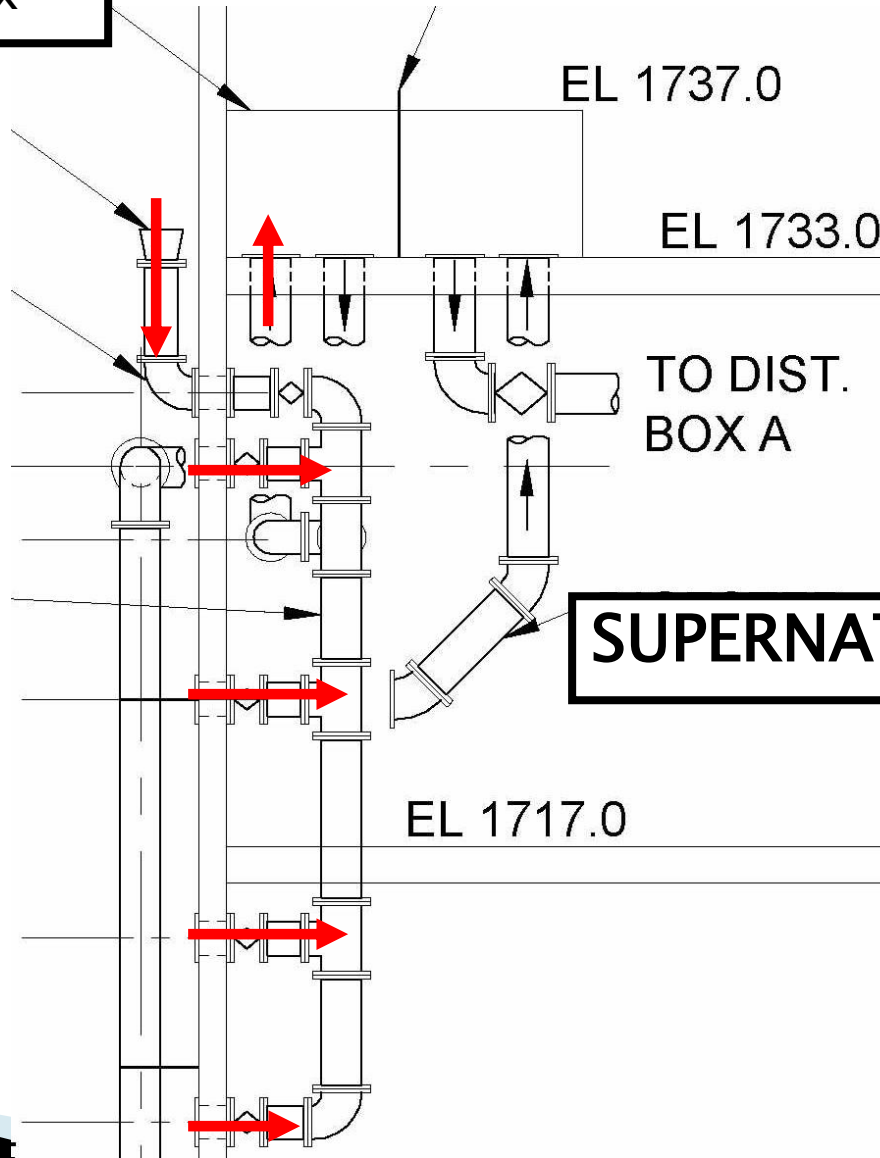
EL 1737.0

EL 1733.0

TO DIST.  
BOX A

SUPERNATANT PIPE

EL 1717.0






- ▶ City employees had previously disabled the plant's overflow system.
- ▶ The supernatant overflow was also locked shut by the City.

Ex. 528

DAILY OPERATIONS AGENDA

 By: Mike Hwin

Alum Feed: gpd ( 1885 ) gph ( 130 ) ~~2.17 gpm~~ ( 2.17 ) gpm

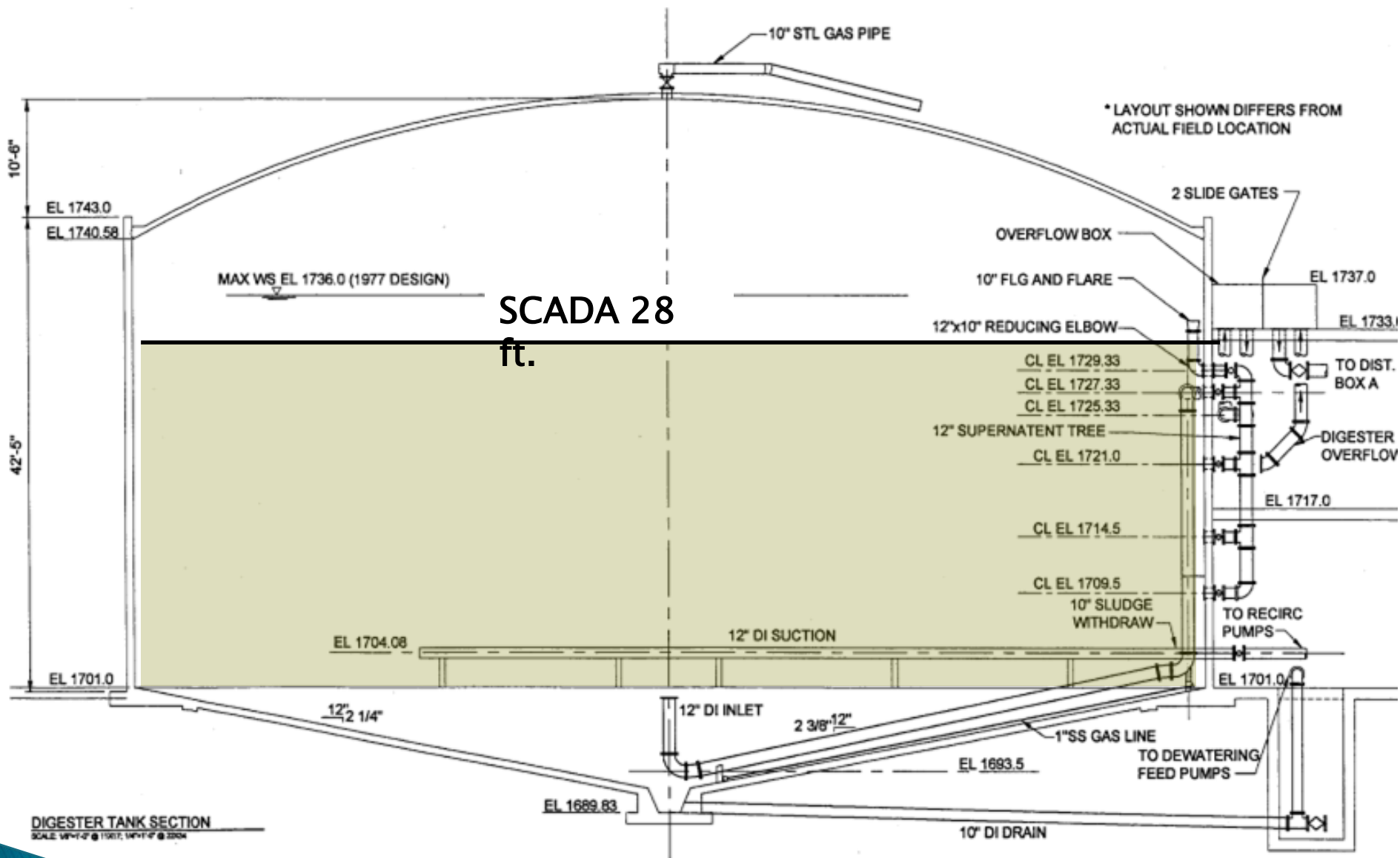
Alum Pumps: time on ( 4:30 AM ) time off ( 7:00 pm )

CL<sub>2</sub> Residual (dpd): 0.6 Mg/L prior to dechlorination

John King would like us to not let Digester levels go above 28 Feet. Because it is allowing foam to get drawn up into the ~~mix~~ GAS Mixing system.

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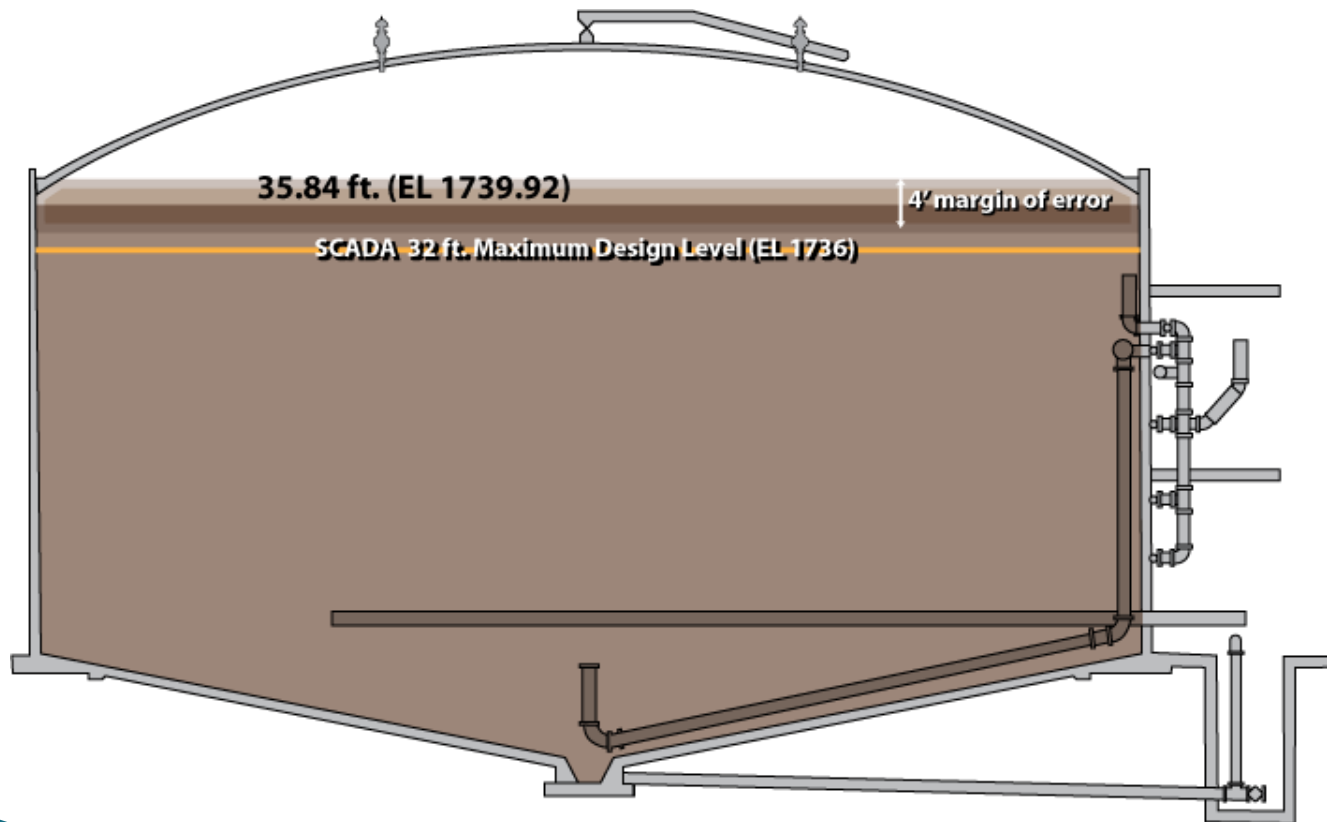
② We still need to use caustic in the Primary






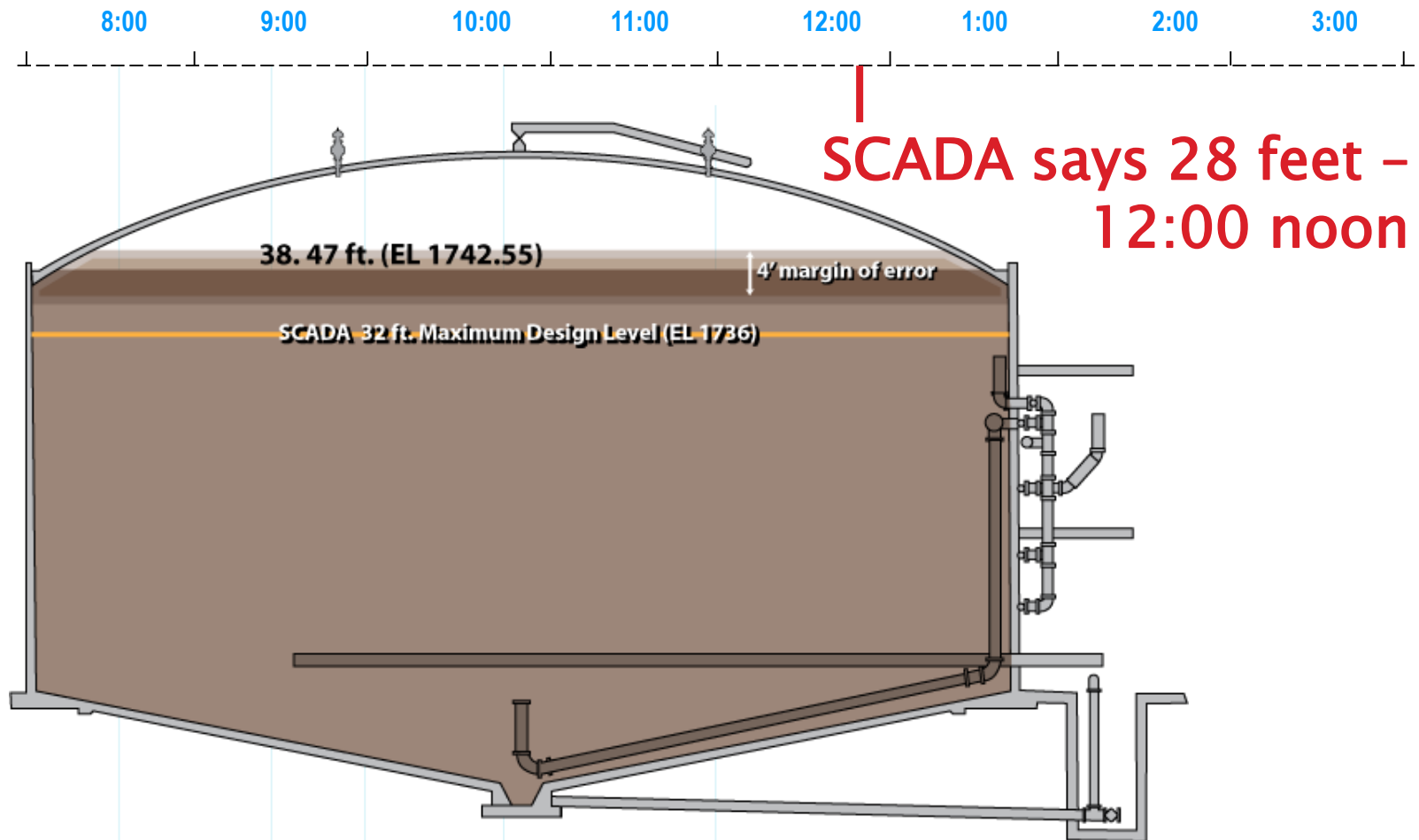


**Sludge reaches dome – 7:30 am**



# The accident

- Operators inadvertently over-filled the digester.
  - Computerized SCADA systems malfunctioned.
  - Later that day, operators failed to use gravity/alternative means to stop the flow into the digester.
  - Engineer was completely uninvolved with any of these operational matters.
- 



King instructs Headley to stop D3 Transfer; Headley does not do so - 11:00 am

Transfer to D3 restarts - 9:50 am

Staff decides to restart transfer - 9:00 am

Transfer into D3 stops successfully- 8:30 am

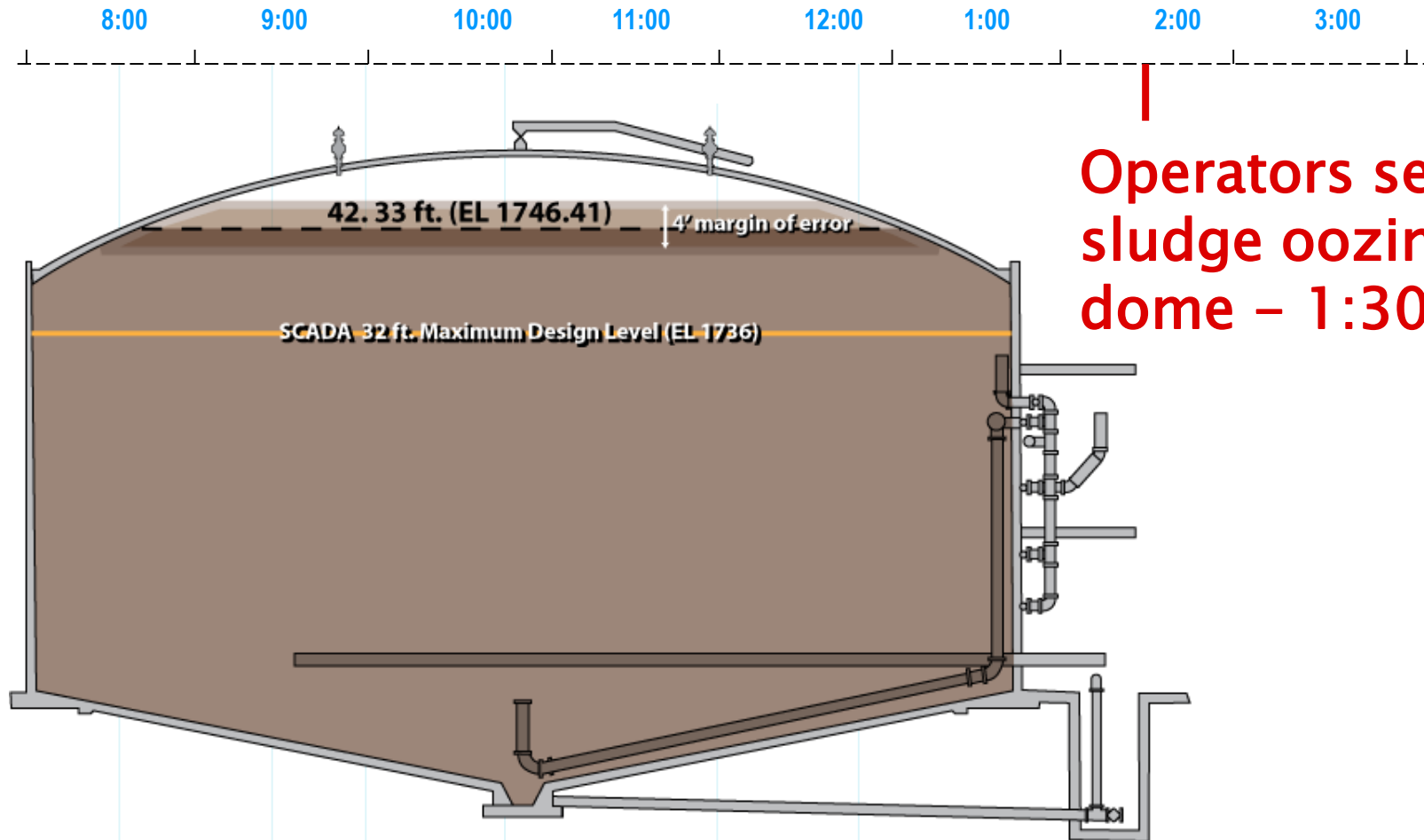
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	A	B	C	D
1	5-Minute - CUSTOM iHISTORIAN REPORT		START TIME	END TIME
2			5/10/04 12:00 AM	5/11/04 12:00 AM
3				
4	Description:	DIGESTER PRESSURE #3 PT-546	DIGESTER LEVEL #2 LT-526	DIGESTER LEVEL #3 LT-527

145	5/10/04 11:35 AM	10.63	21.08	27.69
146	5/10/04 11:40 AM	10.62	21.03	27.78
147	5/10/04 11:45 AM	10.64	20.97	27.88
148	5/10/04 11:50 AM	10.66	20.93	27.96
149	5/10/04 11:55 AM	10.65	20.87	28.07
150	5/10/04 12:00 PM	10.64	20.81	28.13
151	5/10/04 12:05 PM	10.58	20.76	28.25
152	5/10/04 12:10 PM	10.61	20.72	28.35
153	5/10/04 12:15 PM	10.54	20.66	28.45

Ex. 558





SCADA says 28 feet – 12 noon

King instructs Headley to stop D3 Transfer; Headley does not do so – 11:00 am

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Sludge reaches dome – 7:30 am

7:00

8:00

9:00

10:00

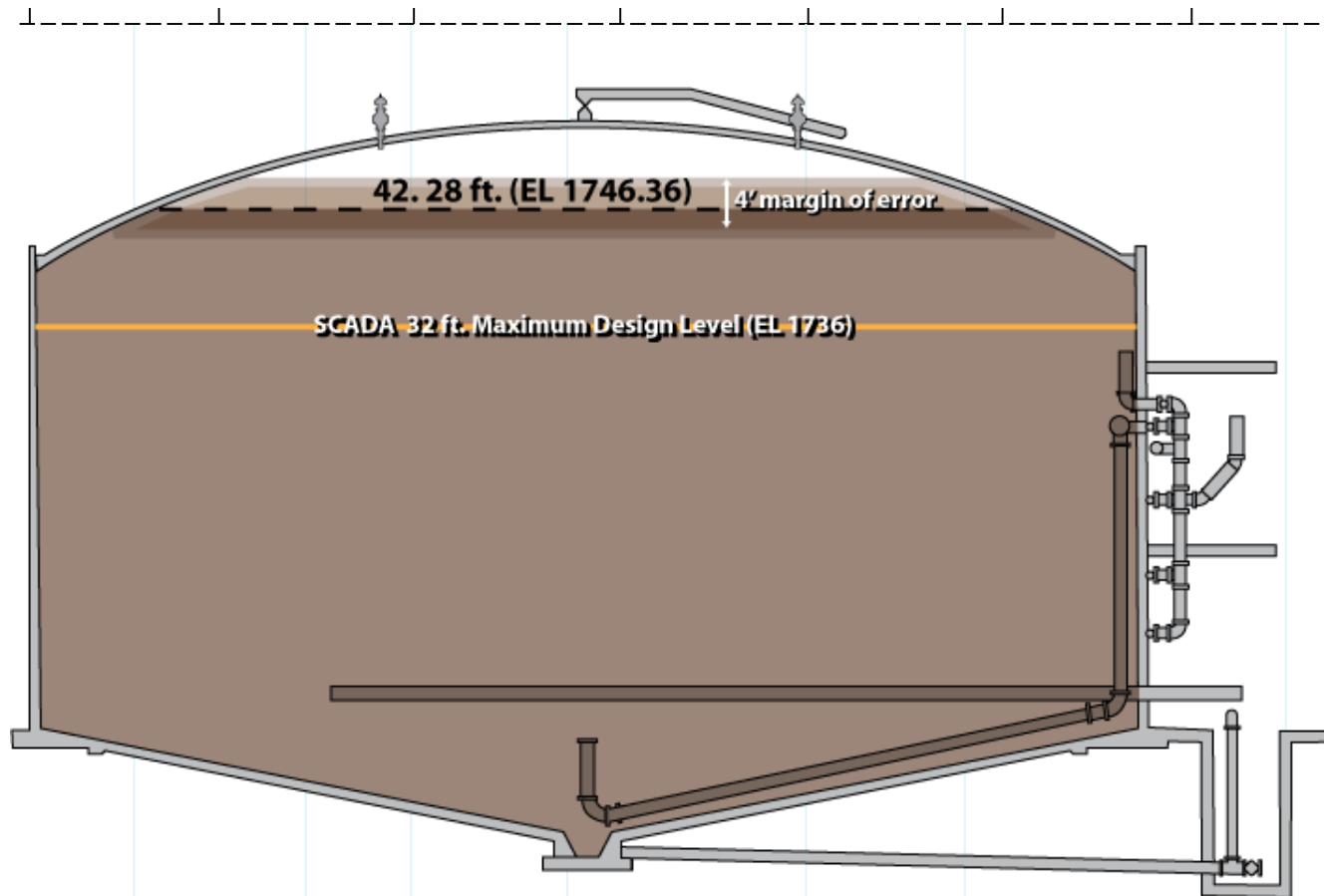
11:00

12:00

1:00

2:00

3:00



Operators see sludge oozing out dome – 1:30 pm

SCADA says 28 feet – 12 noon

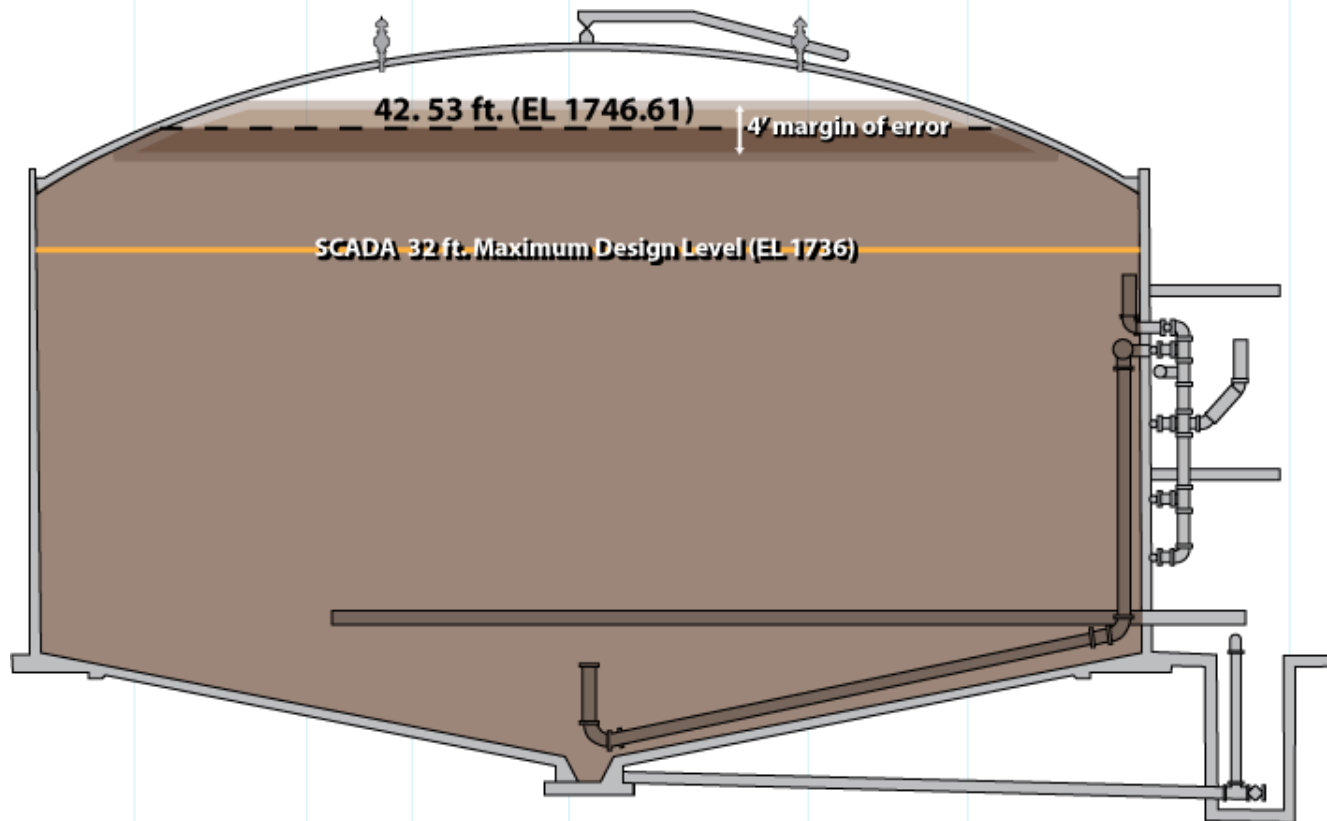
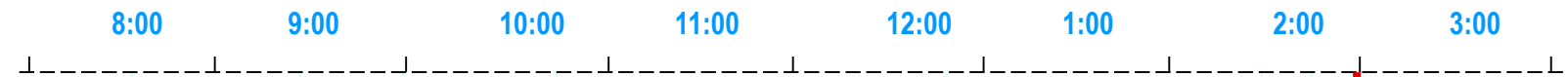
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**Operators  
stop flow  
from D2 but  
not raw feed  
– 2:00 pm**

Don't check overflow  
Don't open supernatant  
Stop raw feed  
Don't start gravity feed – 2:00 pm

High level alarm in D3 – 1:44 pm

Operators see sludge oozing out dome – 1:30 pm

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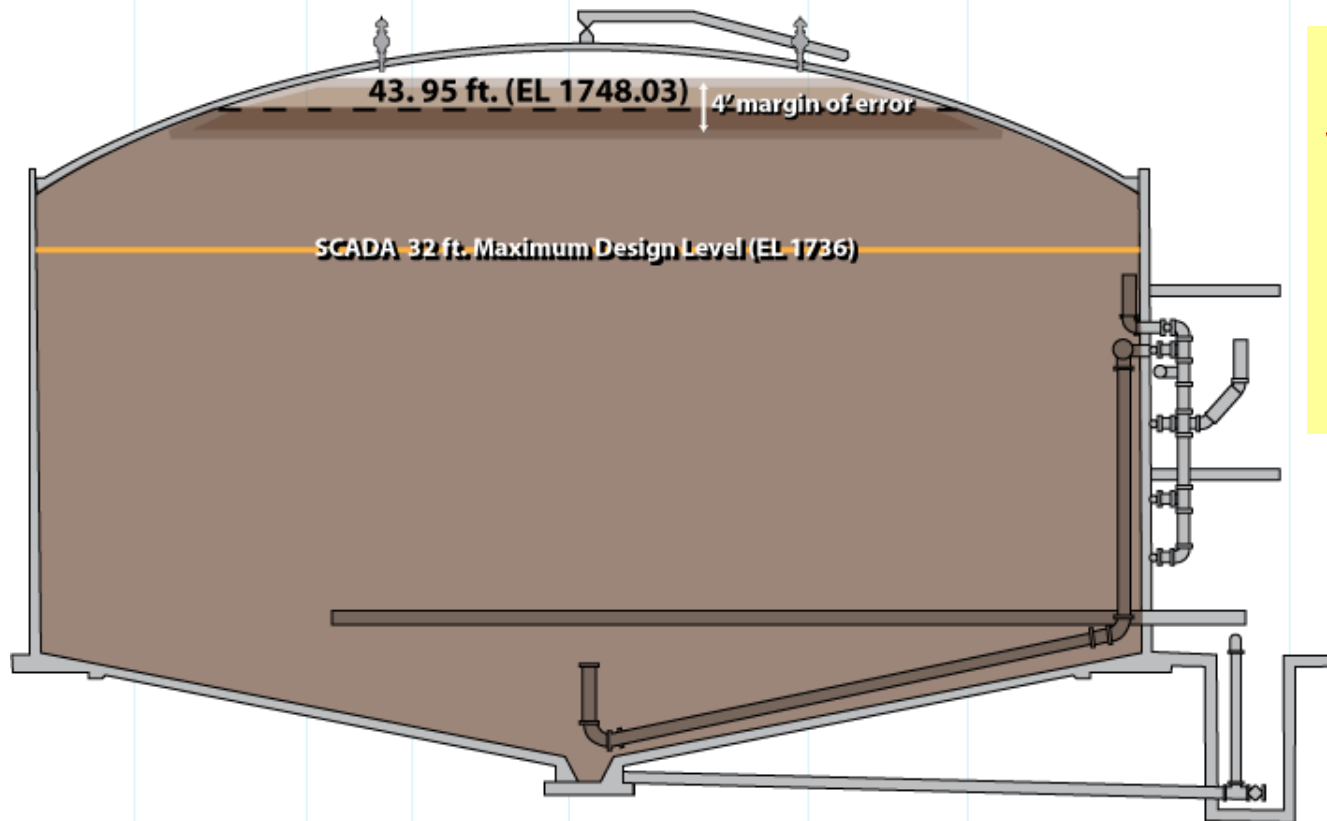
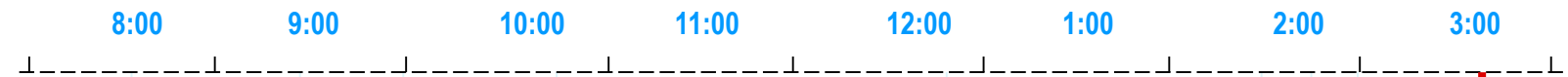
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**Michaels fails to warn about cracks oozing sludge on dome ~ 2:45 pm**

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CONTINUOUS

265° 0° 5.0

001 2004/03/10-13:57:04

7:00

8:00

9:00

10:00

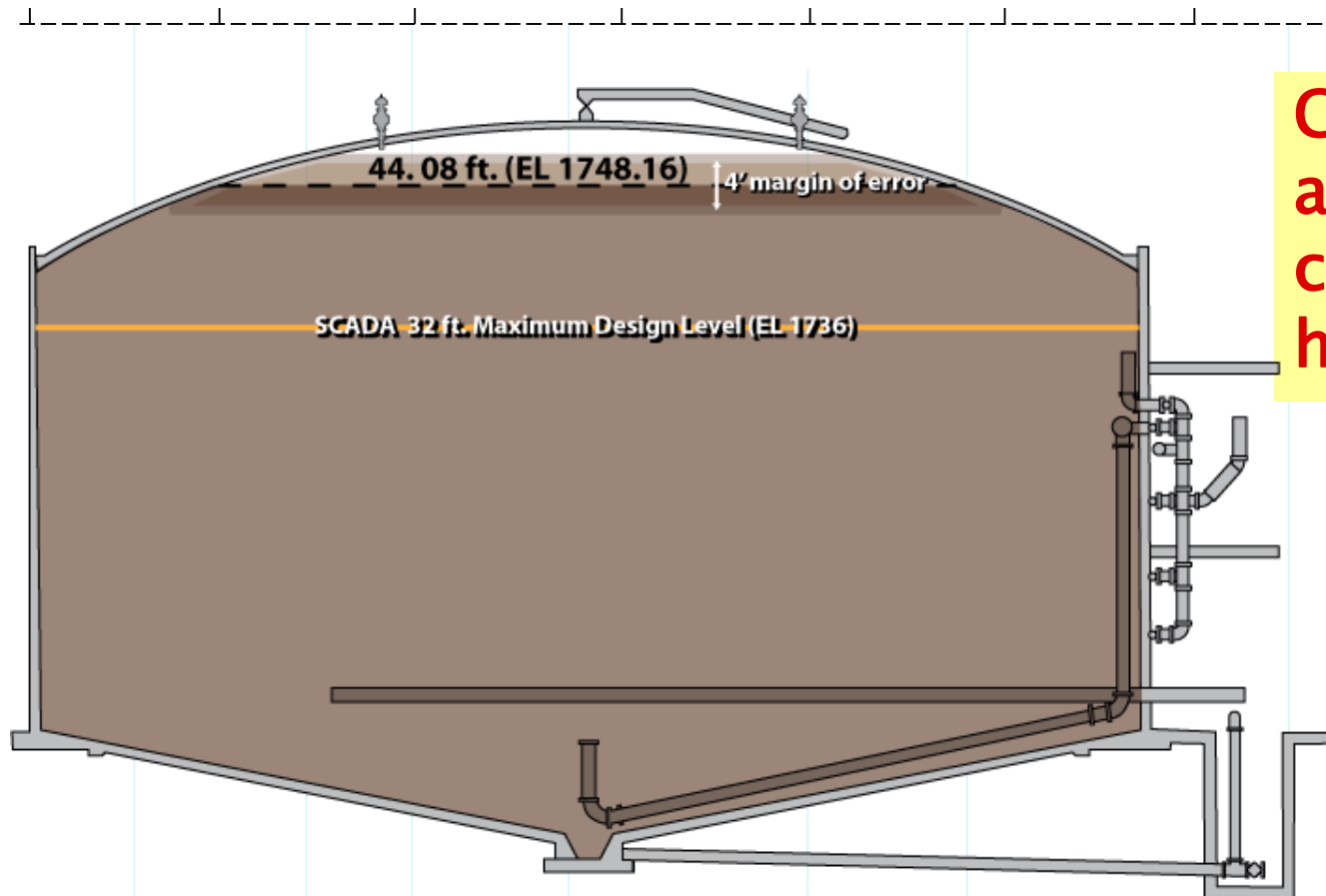
11:00

12:00

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3:00



**Cmos/Evans attempt sludge capture with hose – ~2:50 pm**

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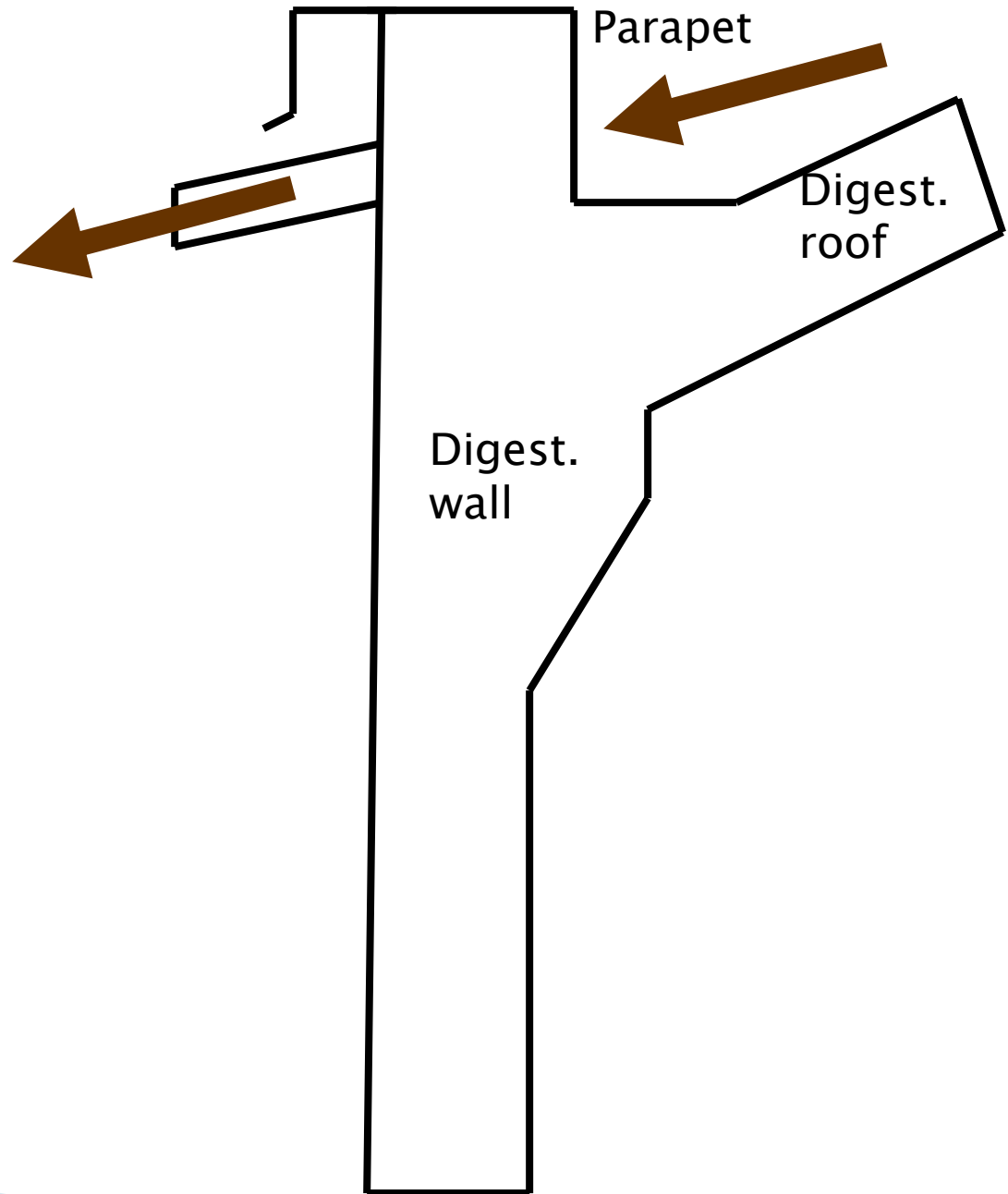
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3" STAINLESS STEEL  
SCUPPER ON DIGESTER



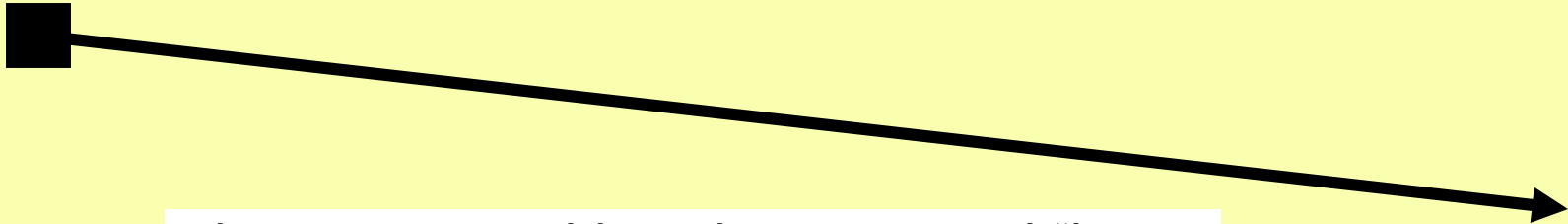




# Proximate Cause: The Legal Standard

**ENGINEER  
SUGGESTION  
OF VALVE**

Engineer's action must have produced injury in "direct, unbroken sequence of events"

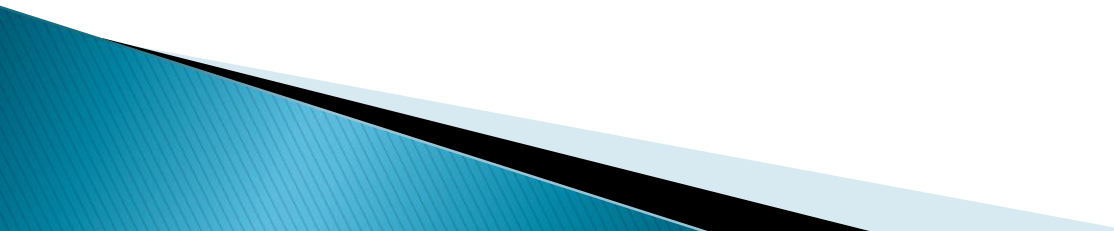


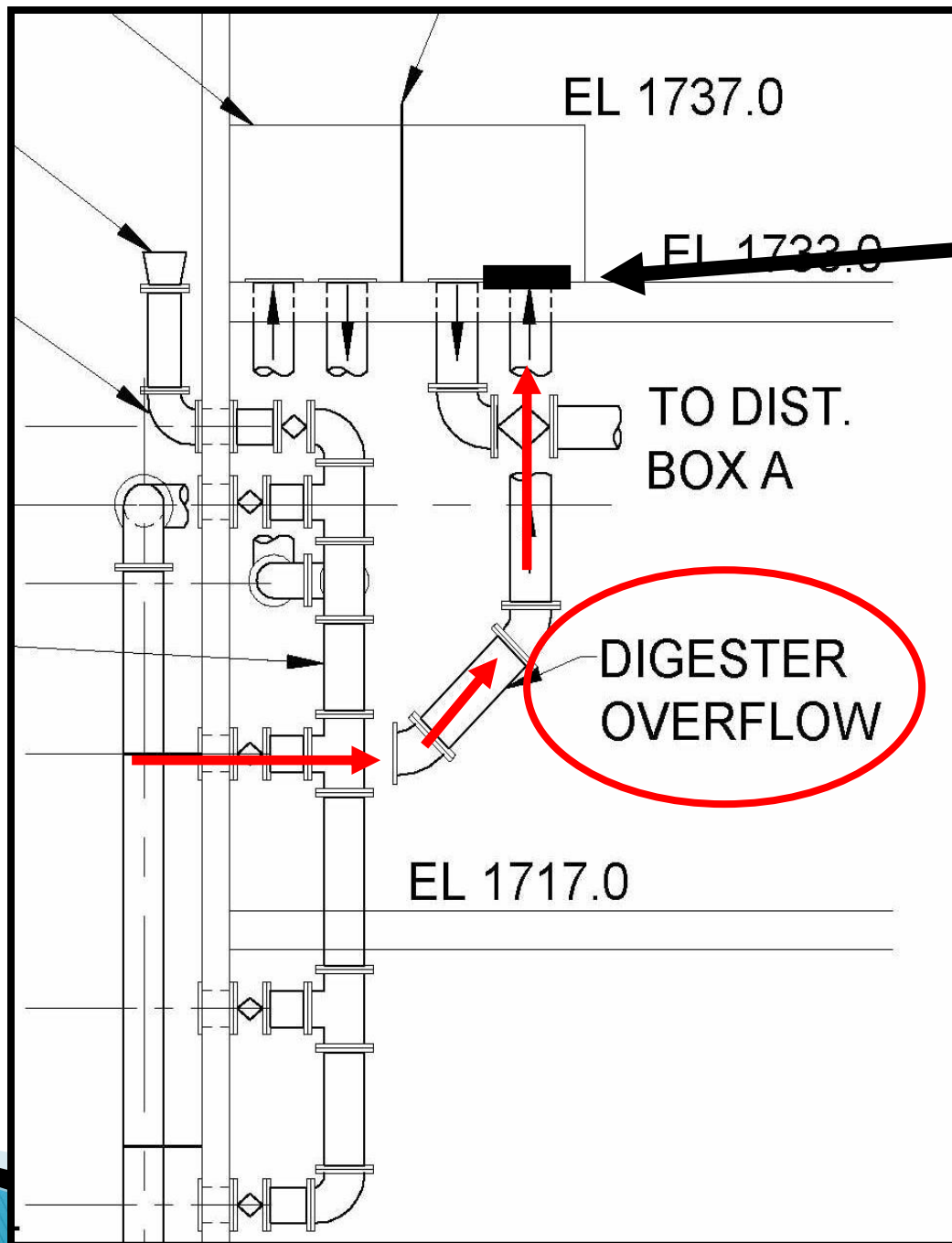
The injuries would not have occurred "but for" Engineer's action or inaction

**Injury to the  
3 Plaintiffs**



# Proximate cause

- ▶ This disaster was literally years in the making.
  - ▶ This truth was entirely unbeknownst to the Engineer.
  - ▶ The City had disabled both its primary and secondary emergency safety systems.
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Blind Flange



Overflow Box

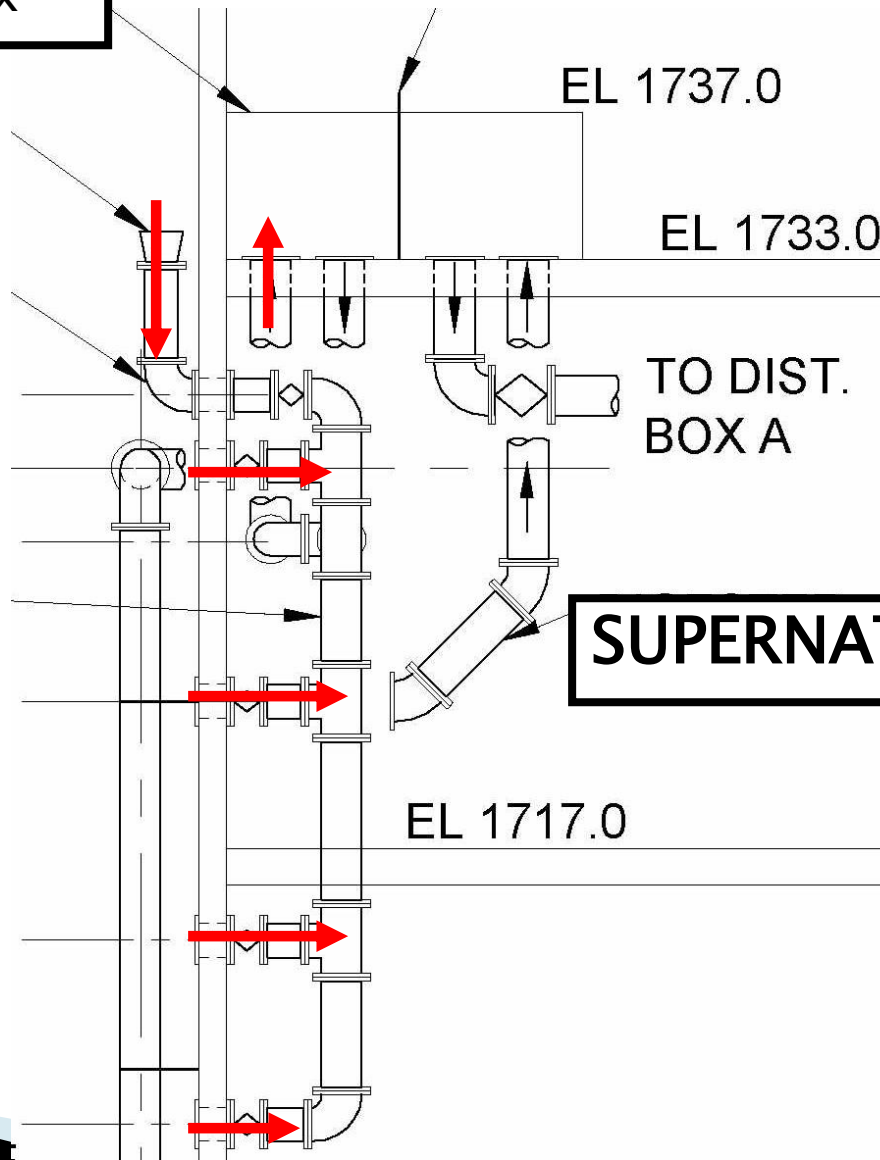
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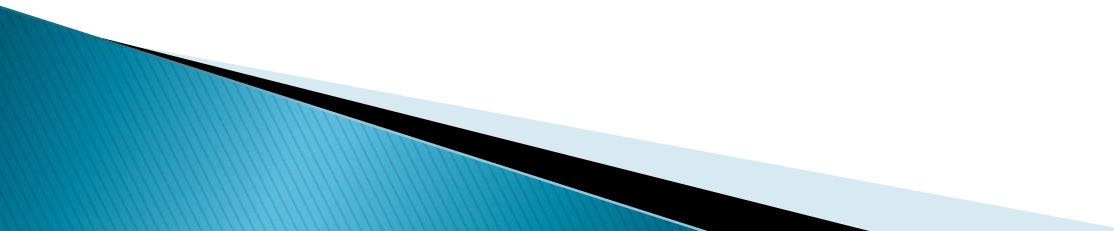
TO DIST.  
BOX A

SUPERNATANT PIPE

EL 1717.0



# Proximate cause

- ▶ Shift supervisors had been advised of the change to the circulation flow according to standard operating procedures.
  - ▶ Likewise, Operators were also been informed of the change, just as with other routine changes to the system.
- 



DAILY OPERATIONS AGENDA

By: Mike Jain

Alum Feed: gpd (4350) gph (300) ~~gpm 1000 1000 1000~~ (5.0) gpm

Alum Pumps: time on (4:30 am) time off (7:00 pm)

CL<sub>2</sub> Residual (dpd): 0.6 Mg/L prior to dechlorination

SPECIAL ATTENTION ITEMS:

- ① AHO: All Operators we are recirculating hot sludge thru the Digesters from the Sludge heaters and returning it thru a newly isolated recirculation line draw off line. You would be best served by going thru a trace of the system. Note: Digs #1 & #3 are done.

~~the~~ draw off line. You would be best served by going thru a trace of the system. Note: Digs #1 & #3 are done.

skellengerbender

ATTORNEYS

\_\_\_\_\_

- We have a modified recirculation of sludge from the heaters to digesters now. Check it out if you haven't already.**

# Proximate cause

- Operators inadvertently over-filled the digester.
- Computerized SCADA systems malfunctioned.
  - SCADA elevation was off by at least 10' at time of event
  - No transfer into D3 should have happened that day based on actual sludge levels

SUPERVISOR'S MEETING  
April 26, 2004

10

Tim:

1. Waiting to hear from Barb Burns on the polymer bid.
2. U.S. Filter will be here this afternoon.
3. We have the I.S.I. fit tests tomorrow and Wednesday.
4. The staff meeting is at "Sewerland" tomorrow.
5. We have a meeting with Kelly regarding digester heating on Wednesday at 2:00 p.m.
6. Kelly wants to discuss PW-3 system update.

John:

1. Looks like the MgOH is taking effect now.
2. Kelly and I went through the digesters recirculation system last Friday.
3. Also, went through PW-3 system.
4. I'll be off work Thursday afternoon.

Mike C:

1. Commented on alum start-up; will start with 4400 gallons.
2. Wednesday, I have a retirement board meeting.
3. Have a meeting with Scott Mallory on Wednesday.
4. We made our zinc requirement.

Our operators said they believe we pumped about 8 ft. to the digesters over the weekend, but digester level only reflects about ½ to 1 ft. change in levels.

Chuck:

1. Ash is back, but Dan is still on vacation.
2. Have some seasonal interviews.
3. Would like to take this Friday off work.

Mike G:

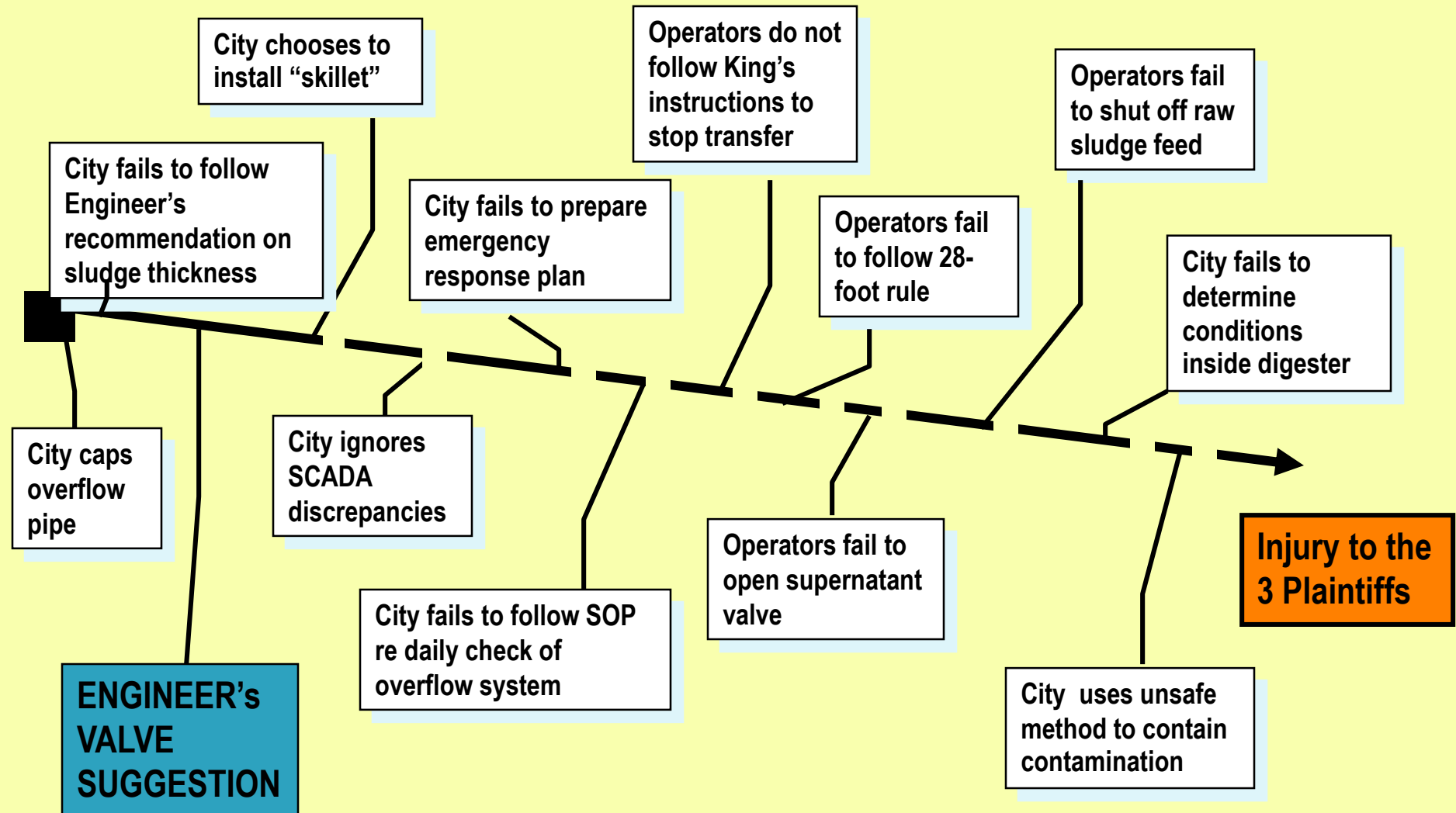
1. Our operators said they believe we pumped about 8 ft. to the digesters over the weekend, but digester level only reflects about ½ to 1 ft. change in levels.
2. We are securing hot sludge recirculation line for grease to the digester so maintenance can tap the line for hot water injection.
3. Are we considering any chemical addition to raise the pH in digester #2?

# Proximate cause

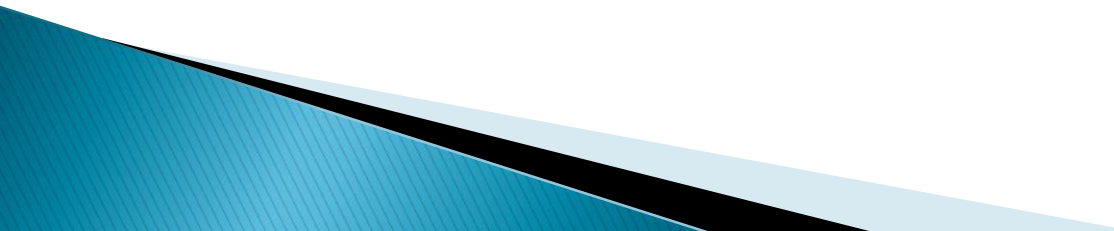
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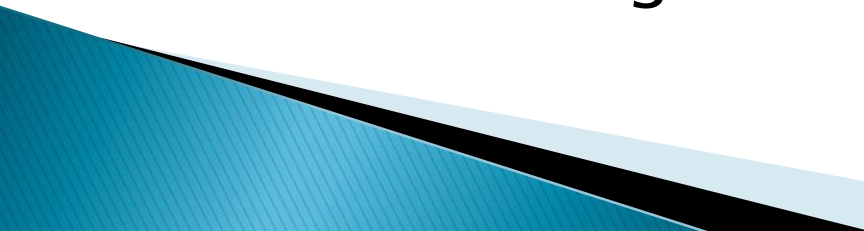
# Proximate Cause: Breaks in Causal Chain



# The lawsuit


- ▶ At trial, the City admitted the Engineer had offered to provide some analysis of the impact on operations with the installation of the skillet.
  - ▶ The City also admitted its multiple instances of failing to follow its own procedures.
  - ▶ The City also admitted that its equipment malfunctioned.
- 

# The lawsuit


- ▶ The plaintiffs' expert testified that none of these things mattered.
  - ▶ This expert testified that the Engineer had an affirmative duty to provide written instructions on the impact to plant operations because of the Engineer's participation in the "brainstorming meeting".
  - ▶ The courts agreed.
- 

# The lawsuit

RCW 52.24.030 (1) – No recovery against DP unless:

- responsibility for site safety is specifically assumed by contract;
  - or the DP actually exercised control over the premises;
  - but no immunity for the “negligent preparation of plans and specifications”
- 

# The lawsuit

- ▶ The WA Supreme Court elected to dramatically narrow the reach of the DP Immunity statute.
  - ▶ “Construction site” as used in the statute, will only mean the physical footprint of construction work.
  - ▶ Therefore, the Engineer’s participation in the brainstorming session does not qualify.
- 




# The lawsuit

- ▶ The Court also decided that this brainstorming meeting constituted the “preparation of plans and specifications”:
- ▶ *“We ...perceive no appreciable difference in recommending a change in the piping of the sludge and location of the skillets under [Engineer’s] “on call” service agreement and preparing written plans and specifications to accomplish the same thing.”*

# The lawsuit

- Notwithstanding the City's declining further help, the Court said the Engineer had a duty to:

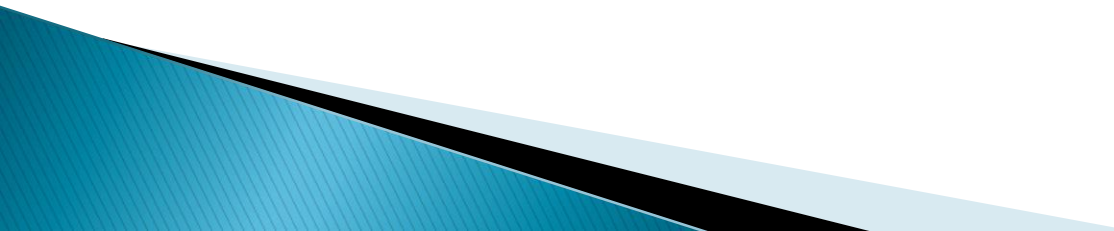
*“... perform an engineering analysis of the ways in which the modification [skillet installation] ... may affect use and operation of the plant, to inform the plant supervisors of the results of such engineering analysis, and to put that engineering analysis in writing.”*



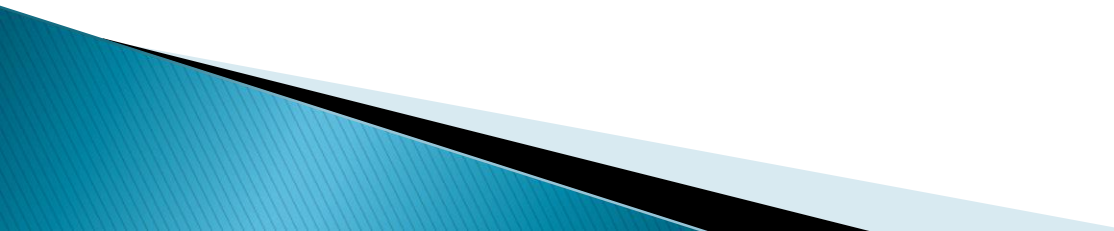
# The lawsuit

- ▶ The Court found that the Engineer should have foreseen the City's multiple errors:

*“... a reasonably prudent engineer in the position of [the Engineer] could reasonably have anticipated that the plant might have been modified over the years, that the city would take steps to keep sewage sludge from flowing into the the Spokane river, and that the SCADA monitoring system might malfunction.”*




# Going forward

- ▶ Never was the legal axiom more true: Bad facts make bad law.
  - ▶ The horrific facts in this case have led to very problematic changes in the risk calculation for design professionals in Washington.
  - ▶ Ultimately, the only solution regarding DP Immunity will likely be legislative action.
- 

# Going forward

- ▶ Design professionals must understand that DP Immunity is significantly eroded in WA.
- ▶ Design professionals must anticipate that future plaintiffs will raise new and creative theories of liability based on this Court's conception of:
  - 1. What "plans and specifications" must include;
  - 2. How the standard of care is now measured.

# Going forward

- ▶ Design professionals are well-advised to consider their new risks and exposures at the outset of projects, and even during negotiating their contracts.
  - ▶ Arguably, *Michaels* creates a new, affirmative duty for designers to proactively take on extra-contractual tasks.
  - ▶ Clients will be billed for this work – sticker shock may affect business relationships.
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# The *Michaels* case

## Questions?

| skellengerbender |

ATTORNEYS