

MEETING MINUTES

Meeting Date: 12/16/2019

Location: Department of Ecology, 3100 Port of Benton Blvd. Room 3A, Richland, WA

Attendees:

Holly Bowers (WRPS)	Ben Piepenbring (WRPS)
Maria Lopez (WRPS)	Jeff Lyon (Ecology)
Eric Van Mason (WRPS)	Jim Alzheimer (Ecology)
Ruben Mendoza (WRPS)	Brian Harkins (DOE-ORP)

Purpose of meeting: Follow up meeting to close out action number 2019-07-11-04 from July 11, 2019, M-045-56 Annual Meeting between the U.S. Department of Energy, Office of River Protection (DOE-ORP) and the State of Washington, Department of Ecology (Ecology).

Summary of Meeting Discussion:

Eric Van Mason initiated the meeting to fulfill action item 2019-07-11-04 from the July 11, 2019, M-045-56 Annual Meeting. Jim Alzheimer inquired about the tank monitoring plan and what action will be taken if there is intrusion. Jim also noted, from his perspective, that if there is water intrusion into tanks, there is no way to determine leaks exist (usually detected by drop in interstitial liquid level). Ecology would like WRPS to be proactive if there are leaks and be able to investigate issues to help mitigate the risks of future leaks. Jim expressed how additional interim measures, such as the interim barrier at T farm, need to be in place to prevent intrusion. Jim suggested processes, such as pumping out liquid or building new tanks. Ecology provided a presentation which described why intrusion prevention is needed. This presentation is attached to these meeting minutes.

Brian Harkins and Ruben Mendoza described the process to identify intrusion. The process includes working with others, determining the rate of intrusion, maintaining pit covers, and annual inspections. Brian discussed that building new tanks or pumping out liquid would require further negotiations on milestones and priorities along with a multi-million dollar budget. Brian asked Ecology for additional suggestions other than the two provided, given that there are no indication of leaks in BY106 at present and there is no longer supporting infrastructure present in the farm as there was in the past to pump out liquids. ORP and WRPS agreed that if there is a process that is cost effective and priorities on milestones from Ecology change, adjustments can be made.

Conclusion:

It was agreed by all parties that negotiations on interim measures and including intrusion should be incorporated into on the going holistic negotiations.

Brian A. Harkins

DOE Project Manager (print)

Jeffery J. Lyon

Ecology Project Manager (print)

Brian A. Harkins Digitally signed by Brian A. Harkins
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DOE Project Manager (signature)

Ecology Project Manager (signature)

Date

Date



Intrusion Prevention Why Is It Needed?

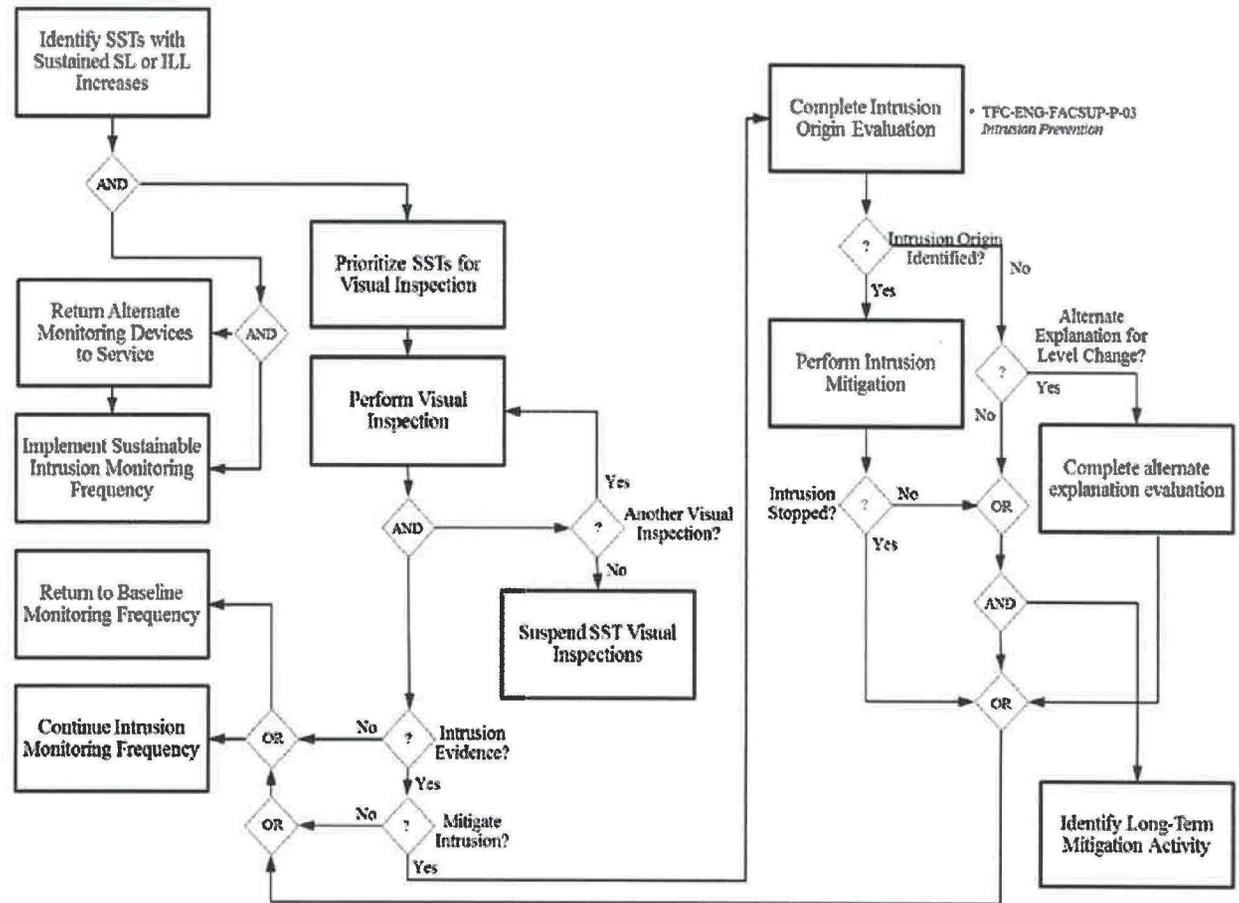
Jim Alzheimer

December 16, 2019

Intrusion Prevention is Needed Because:

- Primarily, intrusion can hide leaks.
- If there is intrusion of atmospheric water into an SST, this will add to the surface or/and interstitial liquid levels{s}.
- It is possible that a liner leak could be occurring in the same SST.
- If the intrusion rate was equal to the leak rate, no level change is likely to be detected.
- If the intrusion rate is higher than the leak rate, the level would be going up while a leak to the vadose zone was occurring.
- SSTs with known or suspected water intrusion should have the intrusion stopped.
- We need to establish a list of tanks that need to be included in an intrusion prevention program. RPP-PLAN-55112 is a very good starting point with more current data included as available. Sequencing of intrusion prevention should consider the planned sequence of SST retrievals. The longer waste is expected to remain in an SST, the more important intrusion prevention becomes.
- Intrusion can also alter waste chemistry but that is a much less significant consideration.

Figure 1-1 - SST Suspect Intrusion Evaluation Plan Logic



RCRA Corrective Action Process is addressing past tank leaks and spills from tanks and ancillary equipment in the S, SX, T, TX, TY, B, BX, and BY tank farms.

- The DOE has completed initial interim measures, such as disconnecting waterlines and testing waterlines, placement of berms and run-on controls at all tank farms, and placing leak-tight caps on drywells to "Prevent further migration of the leak or spill to soils or surface water." These initial interim measures are "designed to minimize intrusion and contaminant migration to groundwater" (HFFACO Change Number M-45-98-03).
- The DOE has agreed to a schedule that will result in the "removal of waste from tank system or secondary containment system" as soon as practical (under HFFACO Milestone M-45-00).

B2.1 LIQUID MINIMIZATION AND CONTROL

Interim stabilization and waste retrieval efforts have reduced the risk of liquid releases from SSTs by reducing the volume of drainable liquid waste in the SST system and limiting the potential for liquid intrusions into the SST system. From an estimated inventory of 74 million gallons of waste in SSTs in 1967, the total waste volume stored in the SST system has been reduced to just over 32 million gallons of liquid and solid waste. Interim stabilization and waste retrieval efforts reduced the drainable liquids in SSTs to an estimated 2.88 million gallons.

Interim stabilization refers to the removal and transfer of pumpable liquids (i.e., the supernate plus the amount of interstitial liquid capable of being pumped) from SST system components (i.e., SSTs, miscellaneous underground storage tanks [MUST], and ancillary tanks) to DSTs. An SST is considered interim stabilized if it contains less than 50,000 gallons of drainable interstitial liquids and less than 5,000 gallons of supernate. A MUST or ancillary tank is considered stabilized if it contains less than 400 gallons of liquids or less than 5,000 gallons of supernate that cannot be transferred by tanker truck (TFC-ENG-CHEM-P-15).

The interim stabilization program for Hanford Site SSTs began with the pumping of Tank BY-107 that achieved interim stabilization in August 1979. Tanks A-104, BX-101, and SX-115 were the first SSTs to be declared interim stabilized in September 1978 (WHC-EP-0182, Rev. 79). Each month, a waste tank summary report is issued that declares the current status of all waste tanks.

Single-shell tank interim stabilization milestones were renegotiated in 1999 and were identified in a Consent Decree (CT-99-5076-EFS) between the State of Washington, Ecology, and the DOE, dated August 16, 1999. According to the Consent Decree, all interim stabilization activities for SSTs were completed by September 30, 2004. The interim stabilization for 241-S-112 occurred during waste retrieval of the tank; the interim stabilization of 241-S-102 has been deferred and will occur during waste retrieval of the tank. With the deferral of the interim stabilization of 241-S-102 and 241-S-112 to the waste retrieval period for each tank, pursuant to the Consent Decree, Interim Stabilization has been completed.

Since 1980, DOE has prohibited the intentional addition of new liquid wastes to the SST system. The DOE has also implemented intrusion prevention actions to limit the potential for intrusion of liquids into the interim stabilized tanks. Intrusion prevention is accomplished in accordance with TFC-ENG-FACSUP-P-03.

4.2 WATER INTRUSION IN SINGLE-SHELL TANKS

Since November 2012, all SST videos (excluding those for retrieval activities) have included evaluation of the tank for water intrusion. Table 4-4 lists those tanks currently identified as having an intrusion. To be included on this list, an SST must meet one of two criteria:

1. An intrusion is observed entering the tank during inspection or subsequent video reviews.
2. An intrusion is not observed during inspection. Liquid is covering at least part of the waste surface, comparison to past in-tank images shows an increase in visible liquid, and the surface or interstitial liquid level indicate an intrusion is occurring.

Table 4-4. Single-Shell Tanks with Confirmed Water Intrusion (2 pages)

Tank (24L-)	Date of Video Inspection*	Notes (see Section 6.1)
A-102	1/21/2014	(6)
B-103	11/28/2018	-
B-112	1/4/2019	-
B-201	2/1/2016	(6)
B-202	1/28/2014	(6)
BX-101	3/11/2013	(6)
BX-103	3/25/2013	(6)
BX-104	11/1/2018	-
BX-107	5/22/2017	(6)
BX-110	2/27/2013	(6)
BY-102	12/28/2012	(6)
BY-103	2/25/2014	(6)
BY-109	5/4/2017	(6)
S-106	3/4/2014	(6)
SX-101	12/14/2017	(6)
SX-102	11/21/2013	(6)
SX-106	04/15/2013	(6)
T-101	3/10/2014	(6)
T-107	1/4/2016	(6)
T-111	12/30/2013	(6)
T-201	3/26/2014	(6)
TY-102	3/7/2014	(6)
U-101	7/30/2019	-
U-102	11/1/2016	(6)
U-105	11/3/2016	(6)
U-109	5/16/2019	-

Table 4-4. Single-Shell Tanks with Confirmed Water Intrusion (2 pages)

Tank (24L-)	Date of Video Inspection*	Notes (see Section 6.1)
U-111	2/19/2014	(6)

27 tanks

* November 2012 and later inspections only, retrieval-related inspections not included. Number of SSTs inspected since November 2012 = 94.

SST = single-shell tank

Table 4-5 lists SSTs identified as having an intrusion in recent years, but the intrusion is not confirmed as currently continuing. To be included in Table 4-5 an SST must meet the following criterion:

1. An intrusion is not observed during inspection. Liquid is covering at least part of the waste surface, comparison to past in-tank images shows an increase in visible liquid, but the surface level or interstitial liquid level are either unavailable or inconclusive as to whether an intrusion is occurring.

Table 4-5. Single-Shell Tanks with Evidence of Recent Water Intrusion

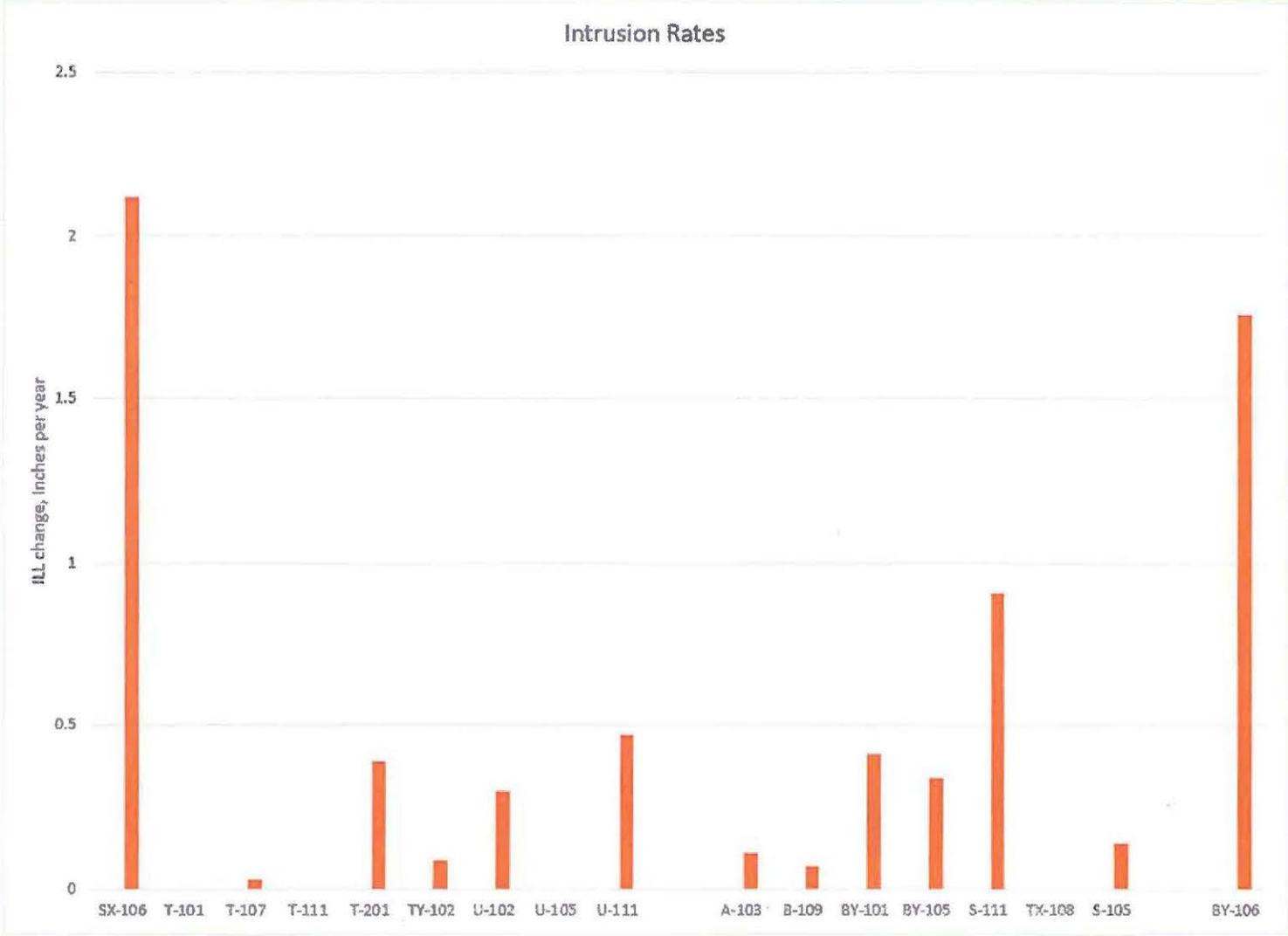
Tank (24L-)	Date of Video Inspection*	Notes (see Section 6.1)
A-105	1/21/2014	(6)
B-109	1/28/2014	(6)
BY-101	3/11/2013	(6)
BY-105	11/10/2016	(6)
S-111	3/25/2013	(6)
TX-108	3/18/2015	(6)
S-105	10/24/2016	(6)

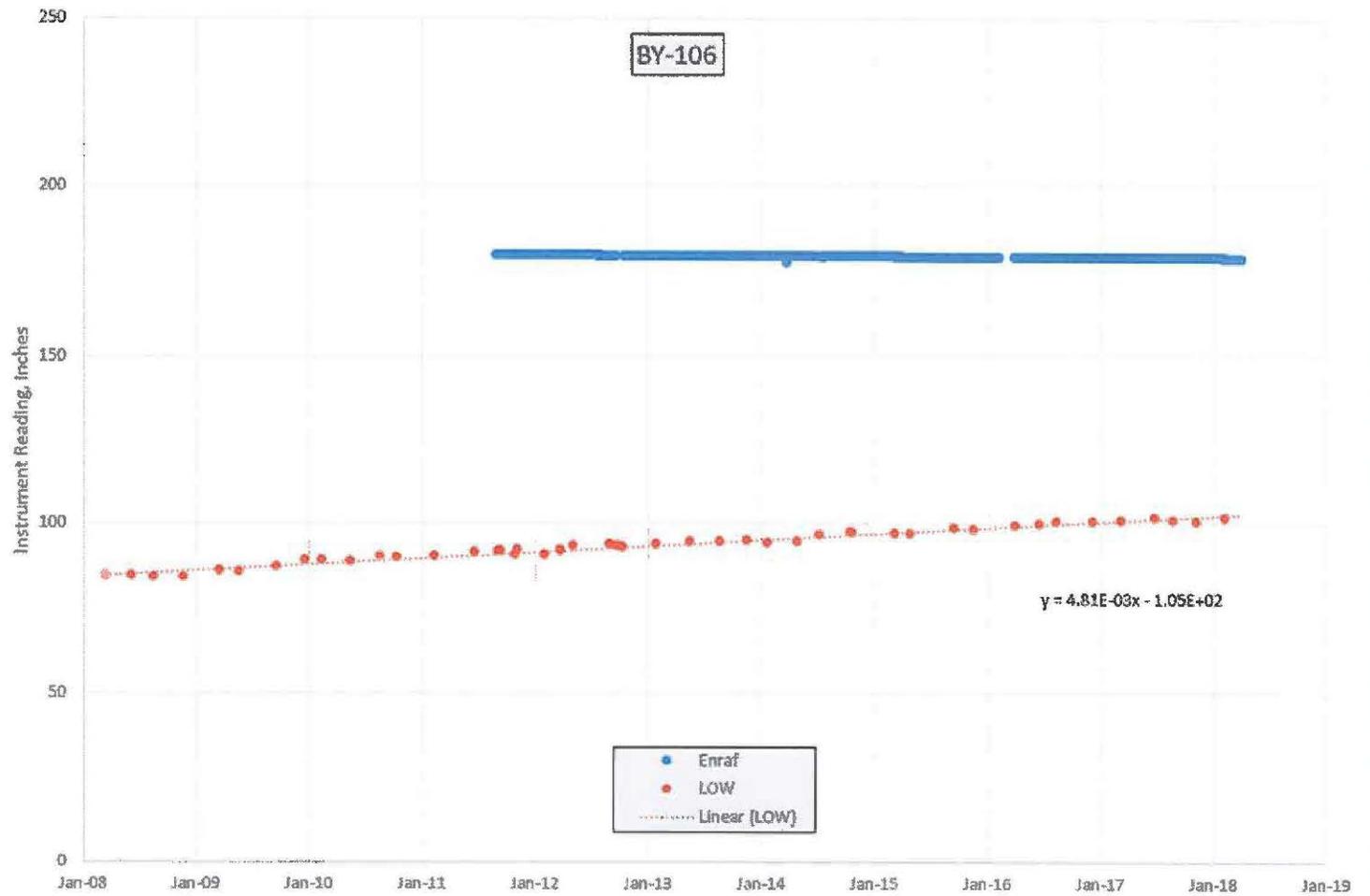
7 tanks

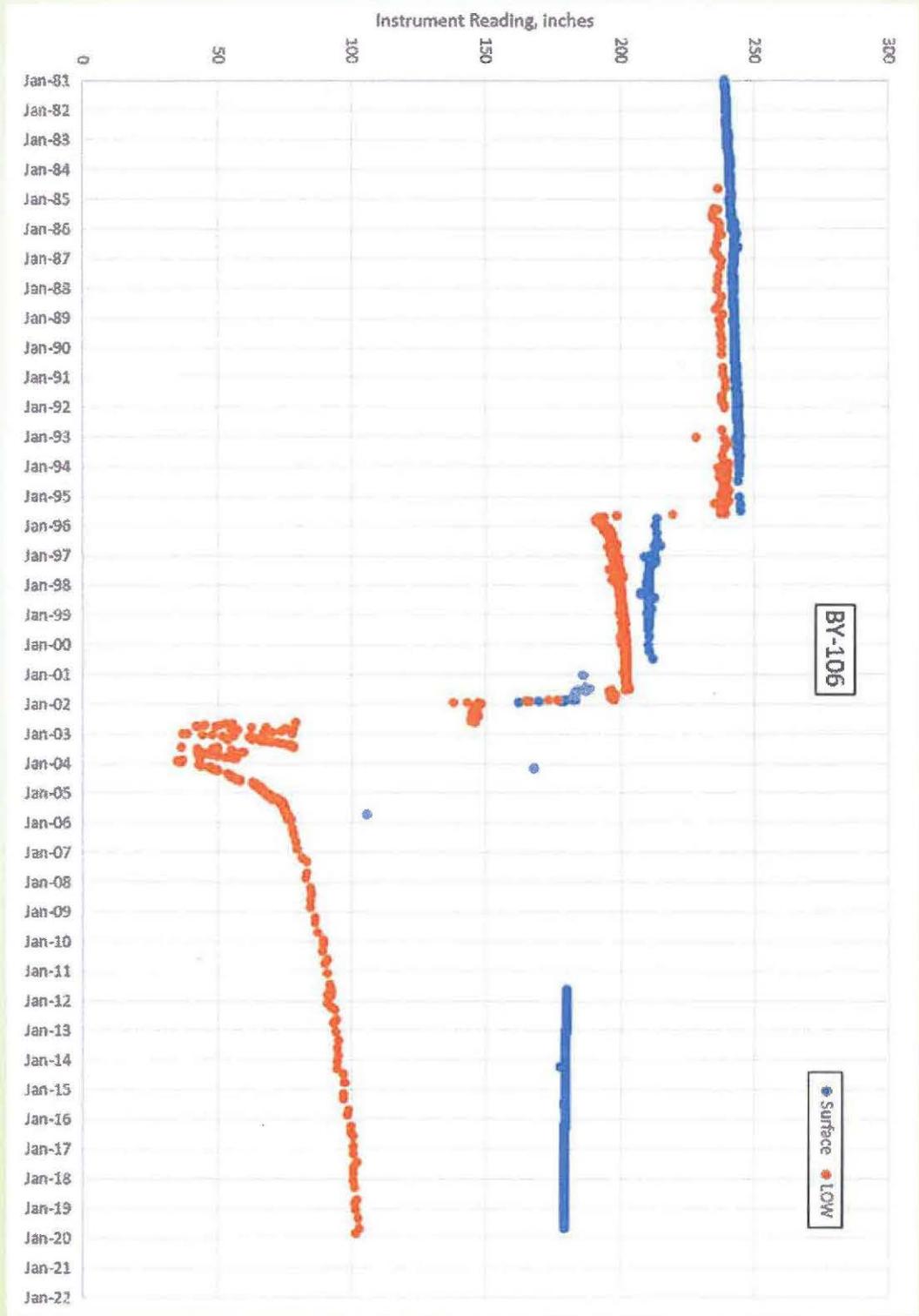
* November 2012 and later inspections only, retrieval-related inspections not included. Number of SSTs inspected since November 2012 = 94.

SST = single-shell tank

BY-106???







Intrusion Prevention

- Waste is going to remain in some SSTs for decades to come
- Water intrusion into an SST can hide a liner leak from tank monitoring
- Intrusion Prevention was an active part of Interim Stabilization
- A TPA Milestone for an Intrusion Prevention Program should be developed