

# **Site Inspection Summary**

## **Abandoned Oil Wells - Shoal Point**

### **Background and Current Status:**

- In 2013 and 2014 concerns were expressed about oil seepage from abandoned oil drilling sites in the Shoal Point area.
- AMEC Foster Wheeler was retained by the Department to assist in the initial assessment and with the planning and implementation of a project to control the oil seepage from the abandoned wells. A repair project was tendered and awarded to Boyd and Bungay Construction Ltd and completed in November 2015. Assessment and post-completion reports are posted to the department's website at [http://www.env.gov.nl.ca/env/env\\_protection/ics/index.html](http://www.env.gov.nl.ca/env/env_protection/ics/index.html).
- The consultant noted the repairs were a temporary fix to stop the leakage and not intended as a permanent solution and that proper decommissioning of the wells should be performed.
- Department staff visited the site December 2, 2015 and determined that the area had been adequately restored and found that the repair work was successful in controlling oil leakage from the abandoned wells.
- On May 25, 2016, the Canadian Coast Guard received a report from an individual advising that oil seepage had resumed from the repaired wells.
- In September 2016, the Department retained AMEC Foster Wheeler to conduct a site assessment and develop cost estimates for potential mitigation options for the ongoing oil seepage. Assessment and costing information will assist government in the development of a permanent well decommissioning plan for the site.
- In September 2017, a contractor executed a repair to prevent ongoing oil seepage from the top of the well casing.

### **Purpose of Inspection** Ongoing Monitoring of Abandoned Oil Wells at Shoal Point

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#### **Site Visit #1: May 25, 2016**

I arrived at site around 11:00 am to follow up on the report of oil seepage/leakage into the bay.

#### Observations/Notes:

- The wells were in the water. High tide was projected for 1:45 pm.
- Wind was mild ~5 km/h and towards the shore.
- No visible sign of oil (sheening/bubbling) in the water in the vicinity of any of the wells.
- No oil odor detected in the vicinity of the wells.
- Only three well casings were observed. The well casing associated with the second well repair of November 2015 is missing.



Photo 1 – Abandoned wells at Shoal Point. Note only three casings are visible.



Photo 2 – Well Repair #1

## Site Visit #2: May 26, 2016

I arrived at site today around 9:00 am. According to tide tables low tide occurred at 8:55 am. Both repaired wells were underwater during my visit.

### Observations/Notes:

- A minor oil presence was observed on the beach in the general area adjacent to the repaired wells. As the tide came in, oil on the beach surface was released upon contact with the water creating a slight sheen on the surface.
- The extension pipe associated with the repair of the second well has broken off from the original well casing. It appears to be broken at the weld. The extension pipe remains in the water. I was unable to locate the old well casing. It may be below the sea floor. I did not observe any oil release from this area.
- Well #1 repair is still intact. I observed what I would estimate as individual oil drops being released in the vicinity of this well. The timing of the release varied from one drop every half a minute to one every 10 minutes. Oil sheens originated from the point of release and spread over the surface of the bay. The pressure reading on the gauge is zero. This corresponds to the reading observed when I last visited the site.



Photo 1 – Base of Well Repair #1



Photo 2 – Casing from Well Repair #2



Photo 3 – Visible oil in vicinity of Well Repair #1



## Site Visit #3: June 1, 2016

I was on site between 2:00 pm and 3:30 pm.

### Observations/Notes:

- The tide was still dropping when I arrived and was rising when I left the site. Winds were extreme causing considerable wave action in the bay. I did not observe any oil sheening in the water for the general area around the repaired wells. However any release would have been quickly dispersed with the waves. There is an oily odor and slight sheening along the beach just south of Well Repair #1.
- As the tide lowered I noticed a small release of oil around the outer edge of the concrete around Well #1. The release is intermittent with a drop every few seconds then one every few minutes. The rate of oil seeping may be comparable to that observed prior to the repair. This is the only area I observed oil seepage. I suspect that the oil is leaking from the well casing and the oil is accumulating under the concrete and is eventually finding an escape route. The repair has not resolved the seepage.



Photo 1 – Concrete base around Well Repair #1



Photo 2 – Oil sheening along shore

## Site Visit #4: July 8, 2016

I arrived on site around 8:45 am which coincided with low tide.

### Observations/Notes:

- The well casings were partially submerged as the low tide was not particularly low (0.3 m). The wind was minimal and the water was calm. I remained at the site for over an hour and observed the four known well locations for signs of oil seepage. During my visit, I did not see any oil release from any of the well locations nor any oil sheening on the water surface or shoreline. There was a very faint oil odor detected along the shore near the first repaired well.



Photo 1 – Well Repair #1



## Site Visit #5: August 10, 2016

I arrived on site around 10:45 am which coincided with low tide.

### Observations/Notes:

- The tide was not particularly low (0.4 m) and as such the bases of the well casings were submerged.
- The wind was noted as 10 km/h SW (towards the shore). I did not observe any signs of oil seepage in the area. I also did not detect any oil odor along the shore or in the vicinity of the wells. The water was relatively turbid and there was some wave action.



Photo 1 – Beach in vicinity of abandoned wells



## Site Visit #6: October 12, 2016

I arrived at site today at 2:00 pm. According to tide tables low tide occurred at 2:10 pm. Winds were about 7 km/h toward the shore.

### Observations/Notes:

- Well Repair #1 was out of the water. The pipe extension remains intact. Throughout the course of the site visit (~ 1 hour) a small amount of oil seepage was observed at a location along the perimeter of the concrete pad encapsulating the well. It is estimated that the rate of seepage was less than 5 millilitres per hour.
- No visible sign of oil was detected at any of the other well locations.
- Oil odor was detected at the seepage location but not elsewhere at the site.



Photo 1 – Well Repair #1



Photo 2 – Location of Well Repair #2



Photo 3 - Abandoned Well Casing





Photo 4 - Abandoned Well Casing



Photo 5 – Oil Seepage at Repaired Well #1

## Site Visit #7: November 9, 2016

I accompanied Amec Foster Wheeler representatives, Clifford Smith (Project Manager) and Titia Praamsma (Hydrogeologist) on a planned visit to the Shoal Point site yesterday. Steven Wheeler, assistant to local MHA John Finn accompanied us on the visit.

We arrived at the tip of Shoal Point just after 12:00. The consultant wanted to examine the surface

### Observations/Notes:

- The well casings were in the water and as such inaccessible by foot. The wind was minimal and the water was calm.
- No visible sign of oil was detected at any of the other well locations.
- Oil odor was not detected at the site.
- Three seals were observed in the bay a couple of hundred feet offshore.



Photo 1 – Well Repair #1





Photo 2 – Abandoned Well Casing



Photo 3 – General Area of Abandoned Wells

## Site Visit #8: May 4, 2017

I arrived at site today at 12:30. According to tide tables low tide occurred at 13:15 pm. Winds were high (20-25 km/h) in a SW direction.

### Observations/Notes:

- Well Repair #1 was in the water. The pipe extension remains intact. The pressure gauge on top of the extension pipe is gone. Oil residue is present at the top of the pipe and along the exterior. No active oil seepage was observed from the well.
- No visible sign of oil was detected at any of the other well locations. The presence of oil in the water would not be evident as the wave action was significant and would quickly dissipate any oil seepage.
- A faint oil odour was evident in the area.



Photo 1 – Well Repair #1



Photo 2 – Abandoned Well Casing



Photo 3 - Abandoned Well Casing



Photo 4 – Abandoned Wells Area



## Site Visit #9: May 29, 2017

I arrived at site today at 8:50 am. According to tide tables low tide occurred at 8:45 am. Winds were moderate (~10 km/h) in a northwest direction (towards the shore).

### Observations/Notes:

- The pipe extension associated with Well Repair #1 remains intact. The concrete base in the water is also intact.
- Oil residue is present at the top of the pipe and along the exterior of the casing.
- Oil seepage was observed in the vicinity of the well. The exact location of the seepage could not be pinpointed. Seepage appeared to originate at various locations within the water and consisted of sporadic oil releases.
- No visible sign of oil or odor was detected at the other well locations.
- An oil odour was evident along the shore downwind of Well Repair #1.



Photo 1 – Oil Coated Extension Pipe of Well Repair #1



Photo 2 – Top of Extension Pipe of Well Repair #1



Photo 3 – Well Repair #1 Casing and Concrete Base



Photo 4 – Abandoned Well Casing



Photo 5 – Abandoned Well Casing



Photo 6 – Oil Seepage/Sheening near Well Repair #1



## Site Visit #10: July 14, 2017

I arrived at site today at 9:00 am. According to tide tables low tide occurred at 9:15 am. Winds were minimal.

### Observations/Notes:

- The three visible well casings are in the water.
- The pipe extension associated with Well Repair #1 remains intact. Oil is observed leaking from the top of the pipe extension where the pressure gauge had previously been located. Oil release is consistent roughly estimated at 15-20 "bubbles" per minute. Released oil builds up on the top plate and drips into the water or on the casing below.
- A strong oil odor is evident near the leaking well.
- Slight oil sheening is evident along the beach surface as the tide recedes.
- No visible sign of oil or odor was detected at the other well locations.



Photo 1 – Area of Observed Oil Leakage from Extension Pipe of Well Repair #1



Photo 2 – Extension Pipe of Well Repair #1



Photo 3 – Abandoned Well Casing



Photo 4 – Abandoned Well Casing



Photo 5 – Slight Oil Sheening along Beach





Photo 6 – Three Visible Abandoned Wells

## Site Visit #11: August 15, 2017

I arrived at site today at 12:20 pm. According to tide tables low tide occurred at 11:05 am. Winds were moderate at ~ 15 km/h in a WSW direction.

### Observations/Notes:

- The three visible well casings are in the water.
- The pipe extension associated with Well Repair #1 remains intact. Oil is observed leaking from the top of the pipe extension where the pressure gauge had previously been located. Oil release is intermittent but somewhat consistent.
- A strong oil odor is evident near the leaking well and along the shore.
- Slight oil sheening is evident on the sand/water interface along the beach downwind from the leaking well.
- No visible sign of oil or odor was detected at the other well locations.
- There is a posted DFO notice on the shore identifying the area as closed to shellfish. It is noted that shellfish are contaminated and unsafe for use as food.



Photo 1 – Oil Leakage from Extension Pipe of Well Repair #1



Photo 2 – Oil Sheening along Beach



Photo 3 – DFO Signage Restricting Shellfish Retention in Area



## Site Visit #12: August 30, 2017

I arrived at site today at 9:30 am. The water level was dropping with low tide anticipated at 11:55 am. Winds were mild at ~ 5 km/h in a NW direction.

### Observations/Notes:

- The three visible well casings are in the water.
- The pipe extension associated with Well Repair #1 remains intact. Oil is observed leaking from the top of the pipe extension where the pressure gauge had previously been located. Oil release is intermittent but somewhat consistent.
- There was no oil odour in the area. Wind was offshore.
- There is significant oil sheening on the water surface which extends hundreds of meters out into the bay in the direction of the wind. The sheen originates at Well Repair #1 as oil droplets are released into the water from the top of the pipe extension.
- No visible sign of oil or odor was detected at the other well locations.



Photo 1 – Oil Leakage from Extension Pipe of Well Repair #1



Photo 2 – Oil Sheening in the Bay (Downwind of Well Repair #1)



Photo 3 – Oil Sheening in the Bay (Downwind of Well Repair #1)



Photo 4 – Oil Sheen Originating from Well Repair #1



## Site Visit #13: September 25, 2017

Arrived at site at 2:30 pm. The water level was rising with high tide anticipated at 3:15 pm. Winds were minimal.

### Observations/Notes:

- The tide is high with only two well casings visible.
- There is oil sheening evident in the water in the vicinity of Well Repair #1.
- Oil sheening and odor is observed at the beach/water interface as the water level rises.
- No visible sign of oil or odor was detected at the other well locations.
- Arrangements were made to have a local contractor remove the damaged pressure gauge and install a threaded fitting in the top plate to seal the opening and to prevent oil seepage from this location. This work has been completed.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Oil Sheening near Extension Pipe of Well Repair #1



Photo 2 – Pressure Gauge Replacement Well Repair #1



Photo 3 – Threaded Fitting in Top Plate of Well Repair #1

## Site Visit #14: October 17, 2017

I arrived on site at 1:15 pm. The water level was rising with the next high tide occurring at 4:14 pm.

### Observations/Notes:

- There was no visible sign of oil in the vicinity of Well Repair #1. The plug placed in the top plate of the extension pipe has stopped the seepage of oil that had been occurring at this location.
- The wind was estimated to be 15-20 km/h SW (towards the shore). The water was relatively turbid and there was strong wave action.
- There was no visible sign of oil or oil odor detected in the area.
- Monitoring of the area for oil seepage will continue.



Photo 1 – General Area of Wells





Photo 2 – Well Repair #1

## Site Visit #15: November 16, 2017

Arrived on site at 2:30 pm. The water level was receding with low tide projected to occur at 4:50 pm. Wind is minimal.

### Observations/Notes:

- Oil sheening is noted on the water surface in the general vicinity of Well Repair #1. Oil sheens are formed as small circular patterns originating at random locations within a 3 metre radius of the well casing.
- Oil sheens are quickly dispersed and there is no major sheening observed in the bay.
- Oil sheen patterns are forming at an average rate of one every 20 to 30 seconds.
- There is a faint oil odor downwind of the well.
- Oil sheening is not occurring at any other of the well locations associated with the site.



Photo 1 – Oil Sheening near Well Repair #1



Photo 2 – Cap Casing of Well Repair #1



Photo 3 – Abandoned Oil Well Casing





Photo 4 – Abandoned Oil Well Casing



Photo 5 – General Site Area

## Site Visit #16: May 15, 2018

Arrived on site near 10:00 am. The water level was rising with high tide projected for 11:33 am. The tide is very high.

### Observations/Notes:

- Well Repair #1 casing and one of the abandoned wells (closest to the tip of Shoal Point) remain intact. The other abandoned well is not visible and is suspected to be underwater.
- There is no visible sign of oil in the vicinity of Well Repair #1. The plug placed in the top plate of the extension pipe has stopped the seepage of oil that had been occurring at this location. The casing is rust coloured and does not show any visible sign of oil staining.
- The wind is estimated to be 15-20 km/h in a west to east direction. The water is turbid/discoloured from the shore and continuing out for about 75 feet. Wave action is relatively strong.
- There was no visible sign of oil or oil odor detected in the area.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Well Repair #1



Photo 2 – General Site Area



Photo 3 – Abandoned Oil Well Casing (Closest to the Shoal Point Tip)



## Site Visit #17: June 5, 2018

Arrived at site at 10:00 am. The water level was receding with low tide projected for 11:23 am. Winds were relatively mild and wave action was minimal.

### Observations/Notes:

- There was no obvious sign of oil release/seepage associated with Well Repair #1 or with any of the other abandoned wells in the area.
- There was no oil odor detected from the shore area.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Well Repair #1



Photo 2 – General Site Area



Photo 3 – Abandoned Oil Well Casing (Furthest from the Shoal Point Tip)

## Site Visit #18: July 31, 2018

Arrived at site at 9:00 am. The water level was rising with high tide projected for 1:47 pm. The wind was westerly at 13 km/h. Waves were moderate.

### Observations/Notes:

- There was no obvious sign of oil release/seepage associated with Well Repair #1 or with any of the other abandoned wells in the area.
- There was a faint oil odor noted upon arrival to the site.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Well Repair #1



## Site Visit #19: September 5, 2018

Arrived at site at 1:15 pm. The visit coincided with low tide which was projected for 1:05 pm. The wind was west north-west at 10-15 km/h. Wave action was minimal.

### Observations/Notes:

- The water level was relatively low with two of the three wells situated in the water only a short distance from the shore.
- Oil sheening was observed in the vicinity of Well Repair #1. The sheening originated from small oil releases (drops) at random locations in the water around the perimeter of the well base. The rate of release varied, but on average, is estimated to be one drop every 20-30 seconds.
- The direction of flow of the oil sheens was towards the shore.
- Oil seepage was not observed from any of the other well locations.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Oil Sheening near Well Repair #1



Photo 2 – Oil Sheening near Well Repair #1



Photo 3 – Oil Sheening near Shore

## Site Visit #20: May 6, 2019

Arrived at site at 10:00 am. The tide was rising with a projected high tide to occur around 12:30 pm. The wind was in a south-west direction at about 5 km/h. The water surface of the bay was relatively calm.

### Observations/Notes:

- The water level was high and as a result the wells were not accessible without use of waders/boat.
- This was the first visit to the site since September 2018. There had been a significant buildup of pack ice in the bay for a considerable period over the past winter. The abandoned well casings do not appear to have been impacted by ice movement/force as they remain intact.
- There was no obvious sign of oil release/seepage associated with Well Repair #1 or with any of the other abandoned wells in the area.
- Oil odor was not detected in the area.
- Monitoring of the area for oil seepage will continue.
- The shoreline along this section of Shoal Point continues to display significant signs of erosion. Large sections of shore bank have broken off and have been deposited in the water.
- Seals (3-4) were observed in the bay.



Photo 1 – Abandoned Well Repair #1





Photo 2 – Abandoned Oil Well Casing (Closest to the Shoal Point Tip)



Photo 3 – Abandoned Oil Well Casing (Furthest from the Shoal Point Tip)



Photo 4 – Erosion of Shoreline at Shoal Point



Photo 5 – Abandoned Well(s) Area



## Site Visit #21: July 23, 2019

Arrived at site at 10:00 am. Low tide was 10:02 am. The wind was in a south direction at about 5 km/h. The water surface of the bay was calm.

### Observations/Notes:

- The water level was relatively low with the wells situated in the water only a short distance from the shore.
- Oil sheening was observed in the vicinity of Well Repair #1. Sheening was predominant in the area around the well base. However, oil sheens were observed originating at random locations within the general well area.
- Tidal and wave action were minimal.
- Sheens formed as oil drops rose to the surface and expanded. Oil remained on the water surface for considerable time creating large sheen areas.
- Oil seepage was not observed from any of the other well locations.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Abandoned Well Repair #1



Photo 2 – Oil Sheening in Vicinity of Abandoned Well Repair #1



Photo 3 – Abandoned Oil Well Casing (Closest to the Shoal Point Tip)





Photo 4 – Abandoned Well(s) Area

## Site Visit #22: September 4, 2019

Arrived at site at 10:15 am. Low tide was 9:19 am. The wind was in a south east direction at about 5 km/h.

### Observations/Notes:

- The tide was low with the wells situated in the water only a short distance from the shore.
- The formation of intermittent oil sheens was observed at random locations in the vicinity of Well Repair #1. The sheens were dispersed by wave action over a relatively short distance from the well.
- The concrete base of Well Repair #1 was covered with seaweed.
- Oil seepage was not observed from any of the other well locations.
- Monitoring of the area for oil seepage will continue.



Photo 1 – Abandoned Well Repair #1





Photo 2 – Seaweed on Concrete Base of Well Repair #1



Photo 3 – Abandoned Oil Well Casing (Closest to the Shoal Point Tip)





Photo 4 – Abandoned Oil Well Casing (Farthest from the Shoal Point Tip)

## Site Visit #23: October 11, 2019

Arrived at site at 10:30 am. High tide (1.3 m) was 10:22 am. The temperature was 8 C and the wind was minimal.

### Observations/Notes:

- The tide was very high and as a result the water level extended well up the beach.
- The release of oil was consistent with that of previous site visits. Oil occurrences were observed at random locations as air bubbles and sheens formed on the water surface in the vicinity of Well Repair #1. The sheens were dispersed by tidal action within a relatively short distance from their point of origin.
- Oil seepage was not observed at any of the other well locations.
- An oil odour was detected from the shore.
- Seals (2) were observed in the bay.
- Monitoring of the area will continue.



## Site Visit #24: May 1, 2020

Arrived at site at 4:30 pm. High tide (1.0 m) was 6:03 pm. The temperature was 9 C and the wind was moderate at about 10-15 km/h.

### Observations/Notes:

- The three historic well casings remain intact.
- The release of oil was consistent with that of previous site visits. Oil occurrences were observed at random locations in the vicinity of Well Repair #1. The sheens were dispersed by tidal action within a relatively short distance from their point of origin.
- Oil seepage was not observed at any of the other well locations.
- An oil odour was detected from the shore.
- Monitoring of the area will continue.



Photo 1 – Shoal Point Abandoned Well Area



## Site Visit #25: July 23, 2020

Arrived at site at 9:00 am. The tide was rising with high tide (1.3 m) predicted to occur at 1:22 pm. The temperature was 19 C and the wind was 10 km/h in a SSW direction.

### Observations/Notes:

- Oil sheening was observed in the vicinity of Well Repair #1.
- Oil seepage was not observed at any of the other well locations.
- An oil odour was detected downwind from Well Repair #1.
- Oil sheening was visible along a section of beach at the water mark.
- Monitoring of the area will continue.



Photo 1 – Oil Sheening at Well Repair #1



Photo 2 – Shoal Point Abandoned Well Area





Photo 3 – Oil Sheening along Shore at Water Mark



## Site Visit #26: April 21, 2021

Arrived at site at 9:45 am. The tide was dropping with low tide predicted to occur at 1:00 pm. The temperature was 2 C and the wind was minimal (<2 km/h).

### Observations/Notes:

- The three oil casings remain intact and are in similar condition as observed last year.
- Oil sheening was observed in the vicinity of Well Repair #1 consistent with previous inspections.
- Oil seepage was not observed at any of the other well locations.
- An oil odour was detected from the shore in the general vicinity of Well Repair #1.
- 8-10 seals were observed in the bay.
- Monitoring of the area will continue.



Photo 1 – Well Repair #1

## Site Visit #27: June 7, 2021

Arrived at site at 4:00 pm. The tide was low (0.3 m) with low tide occurring at 4:04 pm. The temperature was 17 C and the wind was 10-15 km/h in a northerly direction.

### Observations/Notes:

- Oil sheening was observed in the vicinity of Well Repair #1.
- Oil seepage/sheening was not observed at any of the other well locations or elsewhere in the bay.
- An oil odour was detected from the shore in the general vicinity of Well Repair #1.
- Monitoring of the area will continue.



Photo 1 – Oil Sheen near Well Repair #1



Photo 2 – Abandoned Well(s) Area



## Site Visit #28: August 30, 2021

Arrived at site at 10:25 am. The tide was dropping (0.4 m) with low tide occurring at 10:53 am. The temperature was 15 C and the wind was 5-10 km/h in a north-east direction.

### Observations/Notes:

- Wave action was moderate.
- Oil seepage/sheening was not observed at any of the well locations or elsewhere in the bay.
- An oil odour was detected from the shore downwind of Well Repair #1.
- Monitoring of the area will continue.



Photo 1 – Well Repair #1

## Site Visit #29: October 28, 2021

Arrived at site at 9:45 am. The tide was dropping with low tide (0.4 m) predicted to occur at 10:21 am. The temperature was 6 C with winds 20-30 km/h in a south-west direction.

### Observations/Notes:

- Wave action was mild to moderate.
- Oil seepage/sheening was not observed at any of the well locations or elsewhere in the bay.
- There was no oil odor detected during the site visit. Wind direction was away from the shore.
- The top section of the abandoned oil well casing located closest to Shoal Point Tip is no longer intact.
- Monitoring of the area will continue.



Photo 1 – Well Repair #1





Photo 2 – Abandoned Oil Well Casing (Closest to Shoal Point Tip)



Photo 3 – Abandoned Oil Well Casing (Farthest from Shoal Point Tip)



## Site Visits #30 and #31: April 16, 2022

Two site visits were performed on this day. Visit 1 coincided with high tide (1.5 m) and Visit 2 was at low tide (0.1 m).

### Observations/Notes:

- Arrived on site at 10:30 for Visit 1. Wave action was moderate. The tide was significantly high with the majority of the beach under water.
- There were no visible well casings in the water.
- Oil seepage/sheening was not observed in the bay.
- Arrived on site at 17:45 for Visit 2. The tide was significantly low with a large area of the beach exposed.
- The repair for Well #1 is no longer intact. The pipe has been sheared off at the concrete base. An oil/water mixture was present in the remaining section of pipe.
- There was no oil seepage/sheening observed in general vicinity of well repair #2 (Well #2).
- The casing for abandoned Well #3 (well located closest to the tip of Shoal Point) has been sheared off at ground level. There was no oil seepage/sheening observed in general vicinity of this well.
- The casing for abandoned Well #4 (well farthest from Shoal Point Tip) remains intact. There was no oil seepage/sheening observed in the general vicinity of this well.
- A previously undetected abandoned oil well casing was discovered (labelled Well #5). The well is located 10-15 m to the right of Well #4 and a further 20-30 m offshore. An oil/water mixture was observed in the casing resulting in sheening in the bay.
- Monitoring of the area will continue.



Photo 1 – Shoal Point Abandoned Oil Exploration Area (High Tide)



Photo 2 – Abandoned Oil Well #1



Photo 3 – Abandoned Oil Well #2 Area





Photo 4 – Abandoned Oil Well #3 (Closest to Shoal Point Tip)



Photo 5 – Abandoned Oil Well #4 (Farthest from Shoal Point Tip)





Photo 6 – Oil Sheening at Abandoned Oil Well #5



Photo 7 – Shoal Point Abandoned Oil Exploration Area (Low Tide)

## Site Visit #32: May 5, 2022

Arrived at site at 19:45. The tide was dropping (0.2 m) with low tide projected to occur at 20:34. The visit was a joint inspection with representatives from the Petroleum Engineering Section of the Department of Industry, Energy and Technology.

### Observations/Notes:

- The purpose of the visit was to gather information to help determine appropriate action(s) to address ongoing oil seepage related to the legacy oil wells in the area. Unfortunately, the tide was not sufficiently low to conduct a detailed assessment of the wells.
- Oil seepage/sheening was not observed in the bay. Winds were estimated to be >25 km/h resulting in significant wave action.
- A slight oil odor was evident from several locations along the shore.
- Monitoring of the area will continue.



Photo 1 – Area of Well Repair #1



## Site Visit #33: May 17, 2022

Arrived at site at 18:30. The tide was very low (-0.1 m), nearing the minimum tide height that can be anticipated for the site.

### Observations/Notes:

- Bubbling was observed on the surface of the pooled oil/water mixture which had accumulated within the pipe of Well Repair #1.
- Slight and intermittent oil sheening was observed in the vicinity of Oil Well #5. The sheening appeared to originate from within the well casing. The well casing extends about 0.5 m from the sea floor and was level with the water surface.
- A previously undetected abandoned oil well casing was discovered (labelled Well #6). The well is located to the north of Well #5. Slight and intermittent oil sheening was observed in the vicinity of Oil Well #6. The well casing extends about 0.5 m from the sea floor and was just beneath the water surface.
- The locations of the wells are provided on the attached map.
- Monitoring of the area will continue.



Photo 1 – Pooled Oil/Water Mixture Well Repair #1





Photo 2 – Abandoned Oil Well #5



Photo 3 – Abandoned Oil Well #6

## Site Visit #34: August 11, 2022

Arrived at site at approximately 16:00. The tide was dropping with low tide (-0.1 m) projected to occur at 16:58. Representatives from the Petroleum Engineering Section of the Department of Industry, Energy and Technology (IET) also visited the site.

### Observations/Notes:

- The initial site inspection of 2022 revealed that the repair to Well #1 was no longer intact. The repair pipe had been sheared off at the concrete base. Oil/water accumulation was observed in the remaining pipe section resulting in oil seepage/sheening in the bay.
- Discussions and consultations among ECC, IET, technical experts with the petroleum industry and officials from other regulatory agencies were held to examine potential actions to address the ongoing oil seepage.
- A plug and cap system was selected as the most appropriate and viable course of action. The plug and cap system is intended as a temporary measure which will allow future access to the wellbore for further assessment or study.
- The purpose of the site visit was to install the plug and cap mechanism for Well #1. The plug and cap was installed as per the manufacturer's instructions.
- Oil/water mixture continued to accumulate in the well casing after the installation of the plug. Active gas bubbles were observed on the surface within the well casing.
- The active formation of small oil seeps, originating from the sea floor, was observed at several locations.
- Oil sheening was observed in the vicinity of Well #5 and Well #6.
- A strong oil odor was evident in the area.
- Monitoring of the site will continue.



Photo 1 – Plug Installation Well #1





Photo 2 – Plug Installation Well #1



Photo 3 – Installed Plug Well #1





Photo 4 – Oil/Water Accumulation and Gas Bubbles after Plug Installation



Photo 5 – Installed Cap and Plug for Well #1





Photo 6 – Active Oil Seepage at Sea Floor

## Site Visit #35: August 17, 2022

Arrived at site at approximately 8:30. The tide was dropping with low tide (0.3 m) projected for 9:36. Wind was minimal (<5 km/h) and the water surface was calm.

### Observations/Notes:

- The formation of intermittent oil sheens as small point sources was observed at random locations within the bay.
- The cap for Well #1 was removed. An oil presence was observed in the well pipe above the installed plug.
- Oil sheening was observed in the vicinity of Well #5 and Well #6.
- Monitoring of the area will continue.



Photo 1 – Random Oil Sheens forming in the Bay





Photo 2 – Capped Well #1



Photo 3 – Oil sheening at Well #1 (Cap Removed)



Photo 4 – Oil/Water Accumulation Well #1 (Cap Removed)



## Site Visit #36: September 20, 2022

Arrived at site at approximately 12:20 pm. The tide was dropping with low tide (0.4 m) projected for 1:29 pm. Wind was mild (~3 km/h) but increased as the inspection continued. Wave action was minimal to moderate as winds increased.

### Observations/Notes:

- Significant oil sheening was not observed in the bay.
- Bubbles and slight oil sheening were observed in the immediate area of the capped well (Well #1).
- The cap for Well #1 was removed. Oil bubbles were observed originating from within the pipe. Bubbles formed for a few seconds then ceased for 30 seconds to a minute.
- The plug has not eliminated oil release from Well #1. It could not be determined if a reduction in the amount of oil being released was achieved.
- Monitoring of the area will continue.



Photo 1 – Abandoned Well(s) Area View from Shore





Photo 2 – Capped Well #1



Photo 3 – Oil sheening and Bubbles at Well #1 (Cap Removed)

## Site Visit #37: May 29, 2023

Arrived at site at approximately 2:30 pm. The tide was rising with low tide (0.5 m) occurring at 1:26 pm. Wind was moderate to strong (~30 km/h) in a north to south direction. Wave action was moderate with white caps observed.

### Observations/Notes:

- Oil sheening was observed in the bay originating from the general area of Well #1.
- An oil odor was noted from the shore in the abandoned well(s) area.
- Monitoring of the area will continue.



Photo 1 – Abandoned Well(s) Area View from Shore





Photo 2 – Oil Sheening in Area of Capped Well #1



## Site Visit #38: September 14, 2023

Arrived at site at approximately 5:00 pm. Tide was dropping with low tide (0.1 m) predicted to occur at 5:40 pm.

### Observations/Notes:

- Representatives from the Petroleum Engineering Section of the Department of Industry, Energy and Technology (IET) also visited the site. A main purpose of the visit was to inspect the well cap and plug system that was installed for Well #1 in August 2022.
- The cap for Well #1 was removed. A heavy oil/water mixture was observed in the well casing above the plug mechanism.
- Monitoring of the area will continue.



Photo 1 – Oil/Water Mixture in Casing Above Well Plug Mechanism

## Site Visit #39: May 24, 2024

Arrived at site at 7:52 pm. The tide was rising with low tide (0.1 m) occurring at 6:09 pm. Wind and wave action was minimal.

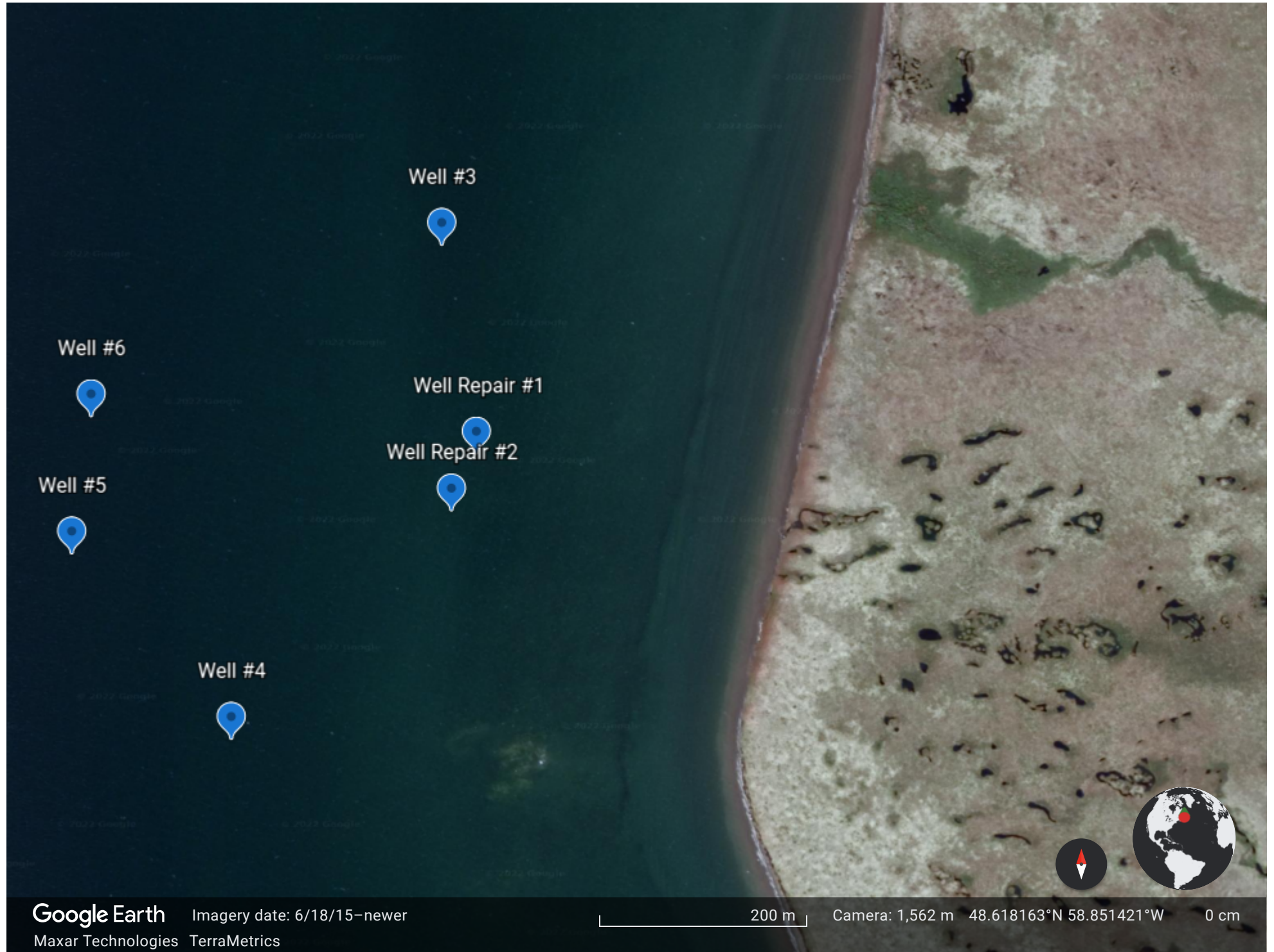
### Observations/Notes:

- Oil sheening was observed in the bay originating from the general area of Well #1.
- An oil odor was noted from the shore in the abandoned well(s) area.
- Monitoring of the area will continue.



Photo 1 – Oil Sheening Originating from Area of Well #1





Google Earth Imagery date: 6/18/15–newer  
Maxar Technologies TerraMetrics

200 m Camera: 1,562 m 48.618163°N 58.851421°W 0 cm