



Hilcorp Alaska, LLC



**Cook Inlet
Offshore
Update**

A Company Built on Energy

Integrity ★ Urgency ★ Ownership ★ Alignment ★ Innovation



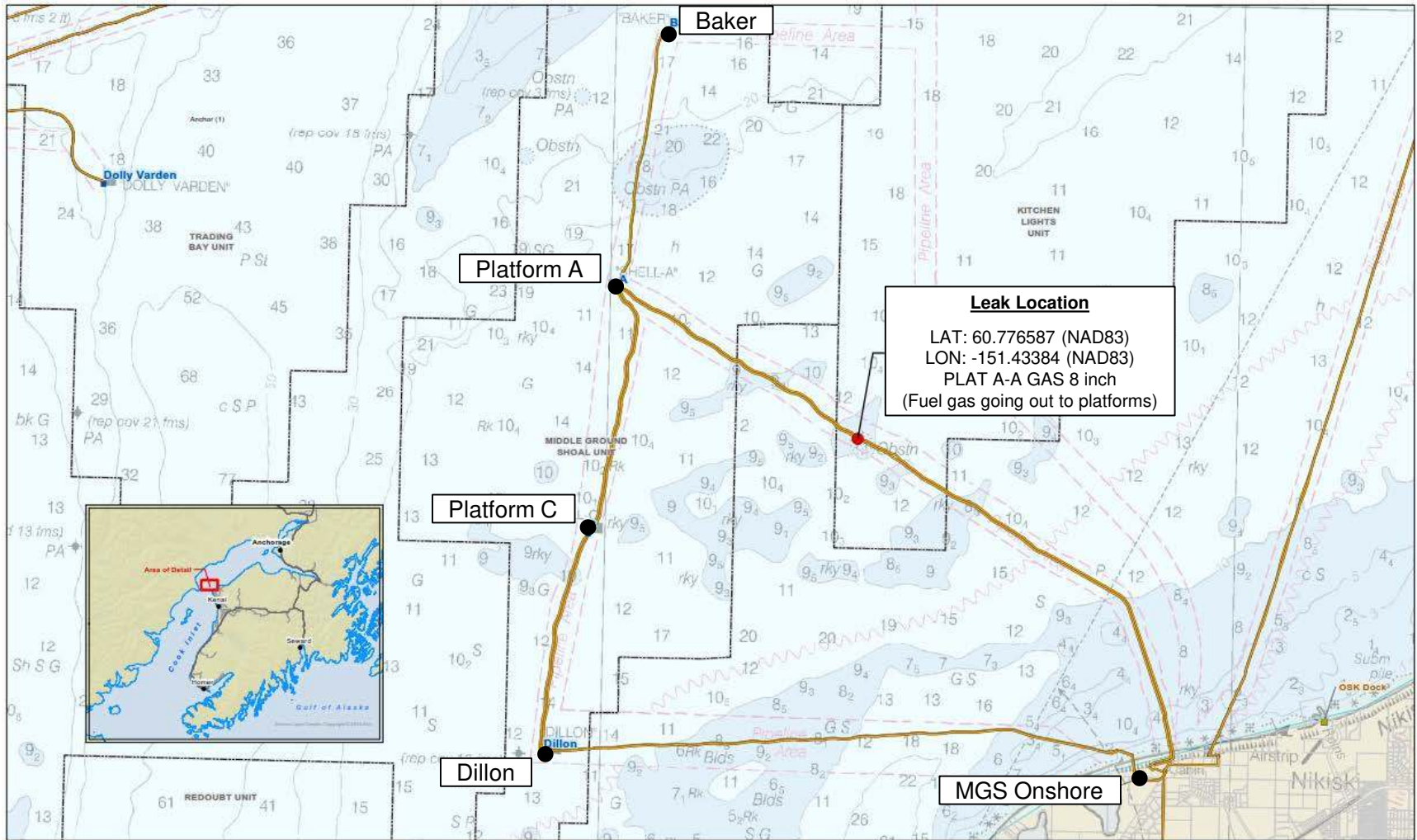
Anna Spill Summary



- Spill Estimated Volume < 3 Gallons
- Immediately shutdown oil shipping pumps and notified Hilcorp EH&S
- Flushed 495 bbl of oil from Anna to Bruce with seawater to eliminate spill potential
- Performed operational hydro test of pipeline at 340 PSI and had no leak
- Still investigating leak source



MGSA to Shore Pipeline





MGSA to Shore Pipeline

Pipeline Information:

- Pipeline was installed in 1965.
- Pipeline converted from oil to gas service in 2005.
- Residual oil exists in the line at an unknown volume.
- Gathered data in 2016 on pipelines after purchasing assets in late 2015. (thickness readings, spans, etc.)
- Leak location is on rock outcrop.

Repair Considerations:

- Heavy ice in the inlet presents unsafe diving conditions.
- Record number of days for freezing fog and limited fly conditions.
- Pigging the pipeline is not recommended before completing pipeline repair. Pig must be pumped with incompressible fluid which could release residual oil from the pipeline.

Reducing Potential Impact:

- Positive internal pressure keeps water out and prevents hydrocarbon from escaping to surface.
- Pipeline pressure reduced voluntarily to reduce leak rate.



MGSA to Shore Pipeline

- **February 7th, 2017:**
 - Leak confirmed
 - Normal operating pressure ~200psi
 - Flowrate ~2.34 MMscfd
 - Leak rate estimated between 210-310 Mcfd
- **February 15th, 2017:**
 - Shutdown water flood processes on platforms
 - Reduced pipeline pressure to ~160 psi
 - Reduced flowrate to ~1.94 MMscfd
- **March 14th, 2017:**
 - Reduced pipeline pressure to ~150 psi
 - Reduced flowrate to ~1.87 MMscfd
- **March 25th, 2017:**
 - Shutdown oil/gas processes on platforms
 - Reduced pipeline pressure to ~65 psi
 - Reduced flowrate to ~0.55 MMscfd
 - Reduced estimated leak rate to 85 – 115 Mcf/day



Moving Forward

Monitoring:

- Monitor pressure and differential flow rates (ins and outs of the system).
- Continue environmental monitoring and sampling,

Pipeline Repair:

- Dive crews are ready to mobilize as soon as conditions permit.
- Temporary clamp installation (3-5 days).
- Permanent clamp installation (5-7 days).

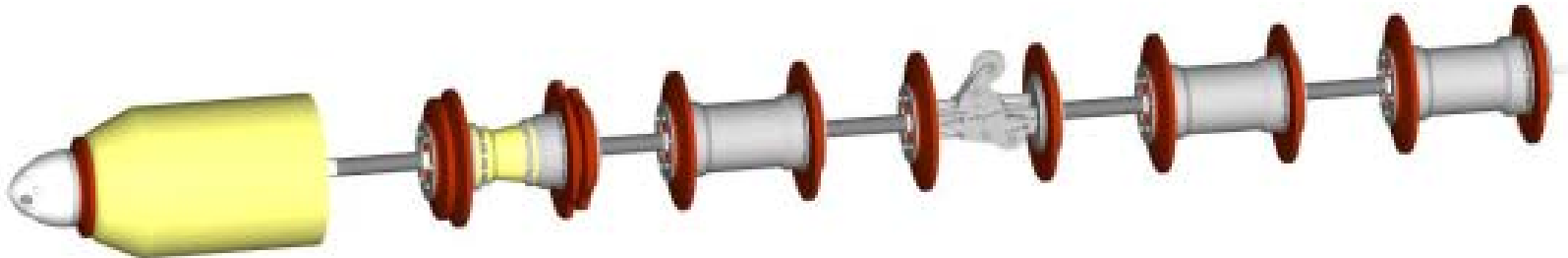
Moving Forward:

- Pipeline modifications to allow pigging (2017).
- Smart Pigging of oil and gas pipelines from Platform A to MGS Onshore.



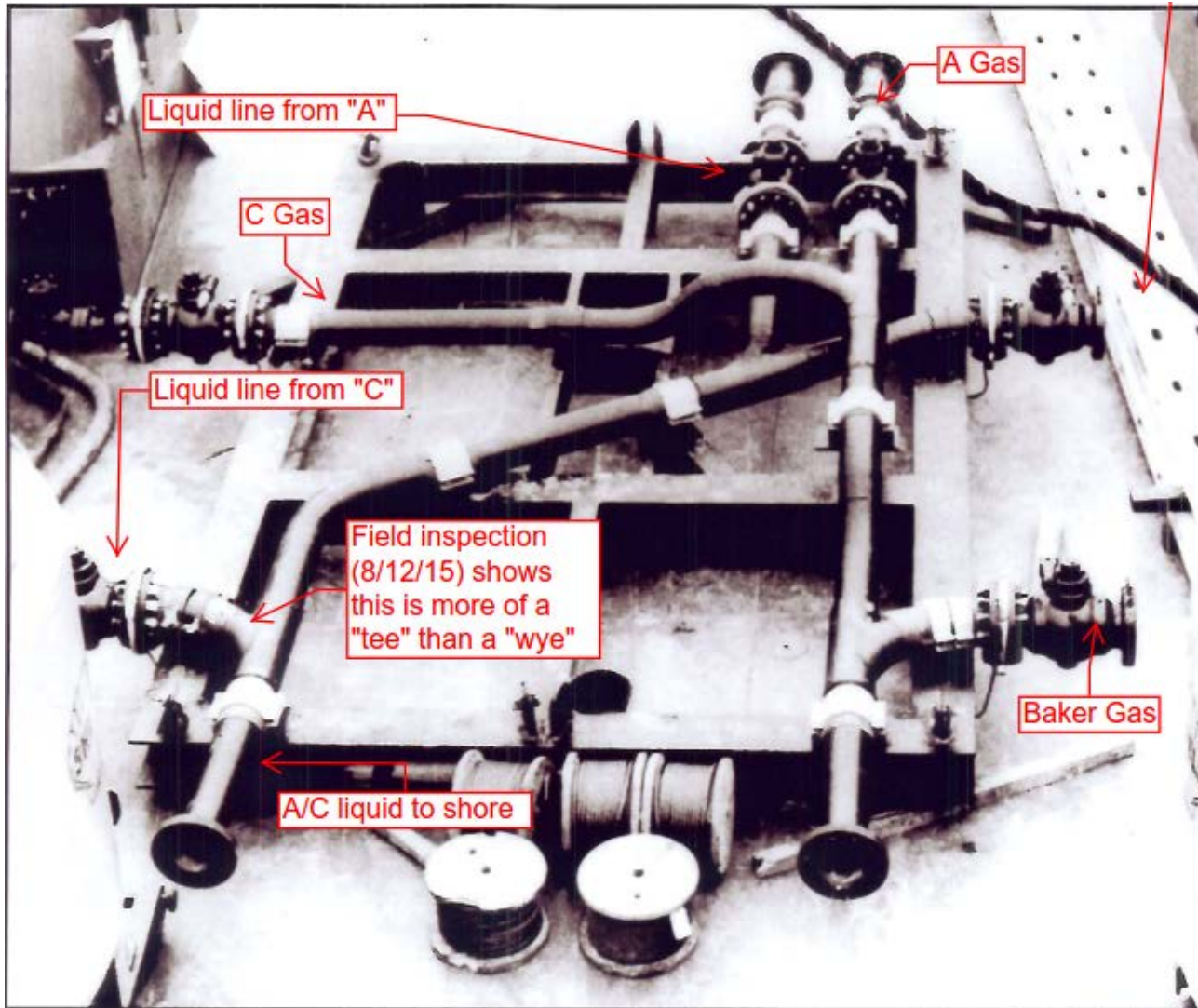
Smart-Pig : UT Pig let

- In-line uni-directional corrosion detection tool.
- Measures metal loss, dents, and GPS location.



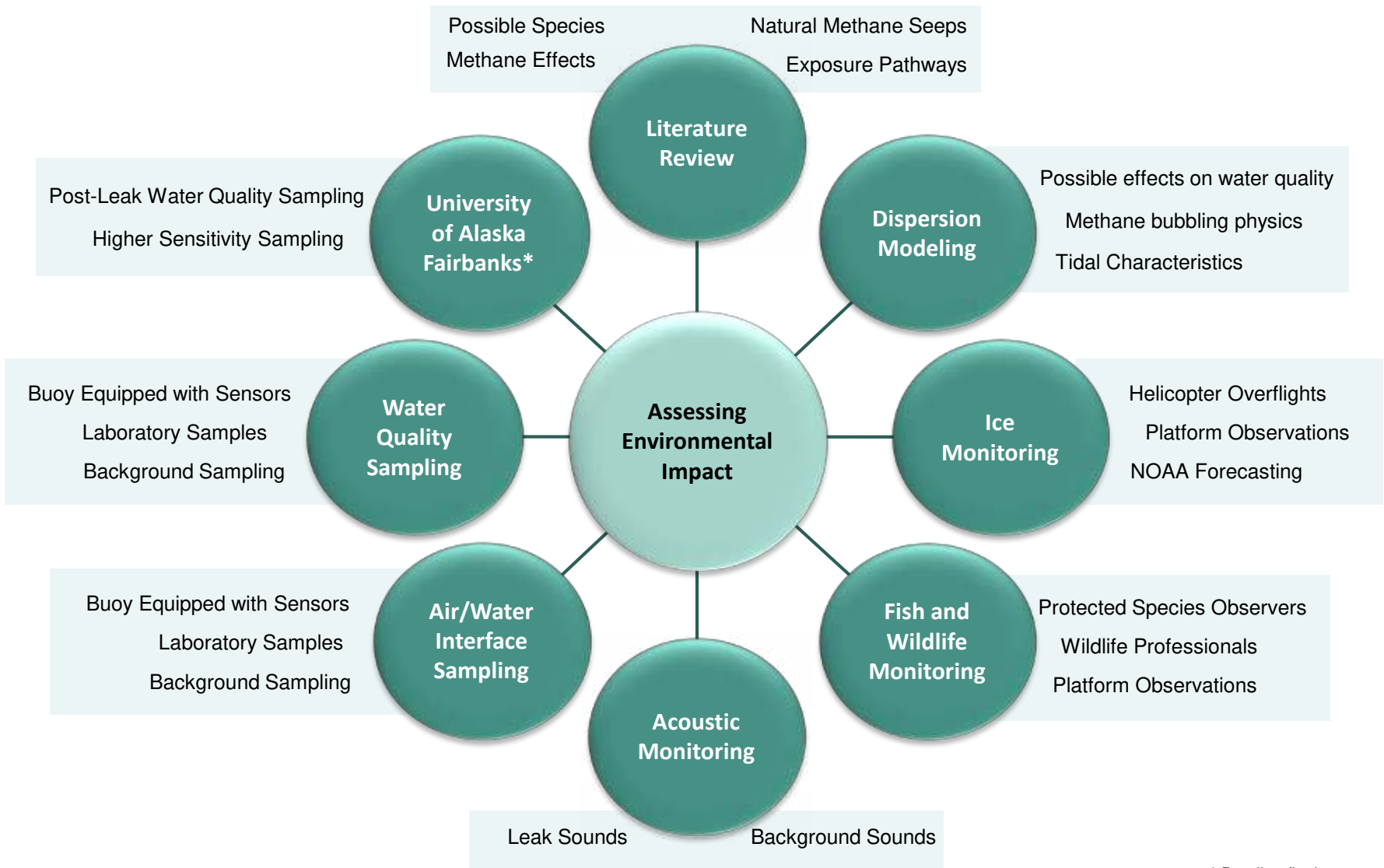


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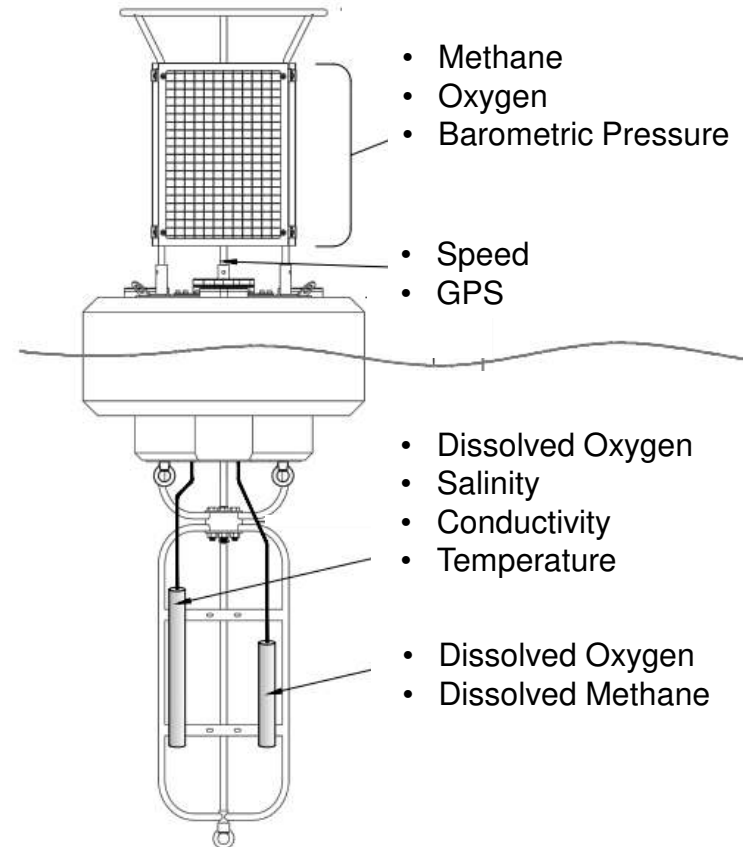
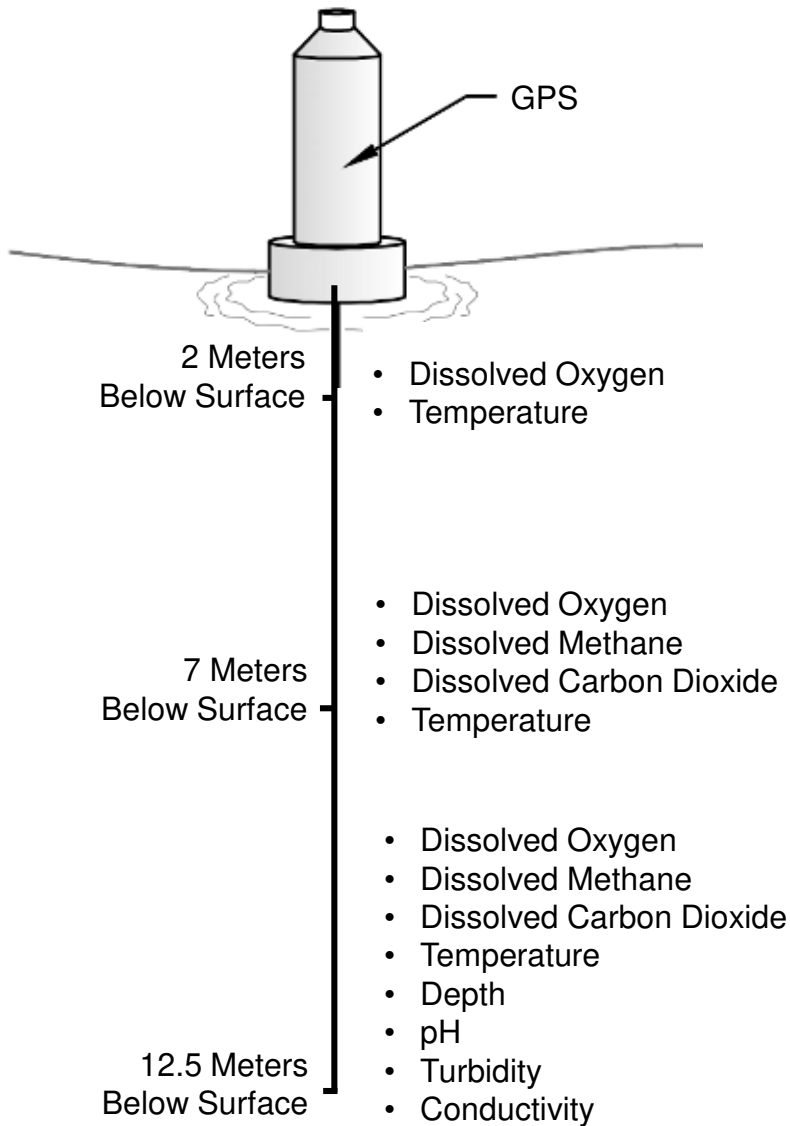
Environmental Monitoring



* Pending final contract approval



Environmental Monitoring



*Data points collected every .25 - 60 seconds.



Environmental Monitoring





Integrity Team

