

## VISUAL INSPECTION REPORT – PRESSURE VESSEL

|                                                                                    |                                                                                                        |                 |                                                                                                                                                |               |            |          |     |      |  |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|----------|-----|------|--|
| <input type="checkbox"/> Installation <input checked="" type="checkbox"/> External |                                                                                                        | Report #:       |                                                                                                                                                |               |            |          |     |      |  |
| Date:                                                                              | August 31, 2016                                                                                        | Description:    | <input checked="" type="checkbox"/> Vessel <input type="checkbox"/> Exchanger <input type="checkbox"/> Furnace <input type="checkbox"/> Boiler |               |            |          |     |      |  |
| Inspector:                                                                         | Donavon Granger                                                                                        | Unit #:         | Equip #:                                                                                                                                       |               |            |          |     |      |  |
| Agent Co:                                                                          | Streamline Inspection                                                                                  | Equip. Name:    | NGL BULLET                                                                                                                                     |               |            |          |     |      |  |
| Owner:                                                                             | CNRL                                                                                                   | Jurisdiction #: | A0227279                                                                                                                                       | CRN #:        | C4936.2134 |          |     |      |  |
| Region:                                                                            | Drumheller                                                                                             | Manufacturer:   | WESTERN                                                                                                                                        | Certified By: |            |          |     |      |  |
| Area:                                                                              | Delia                                                                                                  | Year Built:     | 1986                                                                                                                                           | S/N:          | 27935A     |          |     |      |  |
| Facility:                                                                          | Plant                                                                                                  | Location/LSD:   | 4-8-31-18W4                                                                                                                                    | Capacity:     |            |          |     |      |  |
| Service (Shell Side)                                                               | <input checked="" type="checkbox"/> Sweet <input type="checkbox"/> Sour <input type="checkbox"/> Other | RT: 2           | HT:                                                                                                                                            | MAWP          | 250PSI     | Design T | 66C | MDMT |  |
| Service (Tube Side)                                                                | <input type="checkbox"/> Sweet <input type="checkbox"/> Sour <input type="checkbox"/> Other            | RT:             | HT:                                                                                                                                            | MAWP          |            | Design T |     | MDMT |  |

| PSV Data   | Set P | Capacity | CRN | Tag # | S/N             | Manufacturer | T / F                                                 | In. Sz | Out. Sz  | IV | CSO | PSV Location |
|------------|-------|----------|-----|-------|-----------------|--------------|-------------------------------------------------------|--------|----------|----|-----|--------------|
| Shell Side |       |          |     |       |                 |              | <input type="checkbox"/> T <input type="checkbox"/> F |        |          |    |     |              |
| Tube Side  |       |          |     |       |                 |              | <input type="checkbox"/> T <input type="checkbox"/> F |        |          |    |     |              |
| Other      |       |          |     |       |                 |              | <input type="checkbox"/> T <input type="checkbox"/> F |        |          |    |     |              |
| Serv. Co.  |       |          |     |       | Last Serv. Date |              |                                                       |        | Comments |    |     |              |

| Components |         | Material  | Nominal | CA | Comments |
|------------|---------|-----------|---------|----|----------|
|            | Shell   | SA-516-70 | 19.76mm |    |          |
|            | Head    | SA-516-70 | 1962mm  |    |          |
|            | Channel |           |         |    |          |
|            | Tube    |           |         |    |          |
|            | Other   |           |         |    | Specify: |

|                    |                                                                                                                                                                                       |                                                  |                                                             |                                                                                                                                 |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Foundation         | <input type="checkbox"/> Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Timbers <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Other:          |                                                  |                                                             | Condition Acceptable                                                                                                            |
| Support            | <input checked="" type="checkbox"/> Saddle                                                                                                                                            | <input checked="" type="checkbox"/> Seal-welded  | <input type="checkbox"/> Free to Move                       | Condition Acceptable                                                                                                            |
|                    | <input type="checkbox"/> Skirt                                                                                                                                                        | <input type="checkbox"/> Free of debris Comment: |                                                             | Condition                                                                                                                       |
|                    | <input type="checkbox"/> Hangers                                                                                                                                                      | <input type="checkbox"/> Secure Comment:         |                                                             | Condition                                                                                                                       |
|                    | <input type="checkbox"/> Other                                                                                                                                                        | Specify:                                         |                                                             | Condition                                                                                                                       |
| Orientation        | <input checked="" type="checkbox"/> Hor. <input type="checkbox"/> Ver.                                                                                                                | Dimensions:                                      | Diameter: 2743mm Height: 16669mm Length:                    | Electrical grounding <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> None |
| Ext. Surface       | <input checked="" type="checkbox"/> Painted <input type="checkbox"/> Insulated <input type="checkbox"/> Fire-proofed <input type="checkbox"/> Cladded <input type="checkbox"/> Other: |                                                  |                                                             | Condition Minor Coating Failures                                                                                                |
| Ext. Fixtures      | <input checked="" type="checkbox"/> Ladder <input checked="" type="checkbox"/> Platform(s) <input type="checkbox"/> Other:                                                            |                                                  |                                                             | Condition Acceptable                                                                                                            |
| Inspection Opening | <input checked="" type="checkbox"/> Manway <input type="checkbox"/> Port <input type="checkbox"/> Other                                                                               | Size:                                            | <input checked="" type="checkbox"/> Reinforcement Pads used | <input checked="" type="checkbox"/> Weep Holes Present                                                                          |
| Davit Arm          | <input type="checkbox"/> Present                                                                                                                                                      | <input type="checkbox"/> Greased                 | <input type="checkbox"/> Double Nuted                       | Condition N/A                                                                                                                   |



|                           |                                                             |                                                         |                                                           |                                                 |
|---------------------------|-------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|
| <b>Bolting</b>            | <input type="checkbox"/> Short Bolting Noted                | <input type="checkbox"/> Joined Per Code                | Comments:                                                 |                                                 |
| <b>Piping</b>             | <input type="checkbox"/> PSV                                | <input type="checkbox"/> Supported                      | <input type="checkbox"/> Drains Properly                  | <input type="checkbox"/> Well Coated            |
|                           | <input checked="" type="checkbox"/> Inlet                   | <input checked="" type="checkbox"/> Supported           | <input checked="" type="checkbox"/> Free from leaks       | <input checked="" type="checkbox"/> Well Coated |
|                           | <input checked="" type="checkbox"/> Outlet                  | <input checked="" type="checkbox"/> Supported           | <input checked="" type="checkbox"/> Free from leaks       | <input checked="" type="checkbox"/> Well Coated |
|                           | <input checked="" type="checkbox"/> Drain                   | <input checked="" type="checkbox"/> Supported           | <input checked="" type="checkbox"/> Free from leaks       | <input checked="" type="checkbox"/> Well Coated |
|                           | <input checked="" type="checkbox"/> Instrumentation         | <input checked="" type="checkbox"/> Supported           | <input checked="" type="checkbox"/> Free from leaks/kinks | Comment Acceptable                              |
|                           | <input type="checkbox"/> Process Fluid Identified           |                                                         | <input type="checkbox"/> Flow Direction Marked            | Comment                                         |
| <b>Valves</b>             | <input checked="" type="checkbox"/> Manual Valves           | <input checked="" type="checkbox"/> Free from leaks     | Comment Acceptable                                        |                                                 |
|                           | <input type="checkbox"/> Automated Control Valve            | <input type="checkbox"/> Free from leaks                | Comment                                                   |                                                 |
|                           | <input checked="" type="checkbox"/> Vents and Drain plugged | Comment Acceptable                                      |                                                           |                                                 |
| <b>Protective Devices</b> | <input checked="" type="checkbox"/> Service Tags Present    | <input checked="" type="checkbox"/> Calibration Current | Comments:                                                 |                                                 |
| <b>Gauges</b>             | <input checked="" type="checkbox"/> Pressure                | Reading: 50PSI                                          | Condition Acceptable                                      |                                                 |
|                           | <input checked="" type="checkbox"/> Temperature             | Reading: 18C                                            | Condition Acceptable                                      |                                                 |
| <b>Sight Glass</b>        | <input checked="" type="checkbox"/> Fluid Level             | Reading: 1/2                                            | Condition Acceptable                                      |                                                 |

|                             |                                                                                                                                                                                                                                          |            |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Inspection Summary</b>   | No issues with vessel at the time of inspection.                                                                                                                                                                                         |            |
| <b>Recommended Actions:</b> |                                                                                                                                                                                                                                          | <b>NCR</b> |
|                             |                                                                                                                                                                                                                                          |            |
|                             |                                                                                                                                                                                                                                          |            |
| <b>VESSEL STATUS</b>        |                                                                                                                                                                                                                                          |            |
| Integrity Status            | Suitable for Continued Service <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Immediate Repairs Required <input type="checkbox"/> Future Repairs Required <input type="checkbox"/> Replace |            |
| Inventory Status            | <input checked="" type="checkbox"/> In Service <input type="checkbox"/> Out of Service <input type="checkbox"/> Surplus <input type="checkbox"/> Scrap                                                                                   |            |

Recommended Inspection Interval: 5 yrs.

Recommended PSV Interval: \_\_\_\_ yrs.

IPV/IBPV Certificate #: 000752 API 510 Certificate #: 48529 PEI Certificate #:

Signature of In-Service Inspector:

\*Recommended inspection intervals are based off of the current inspection\*

INSPECTION PHOTOGRAPHS



LSD Sign



Data Plate



Vessel Overview



PSV



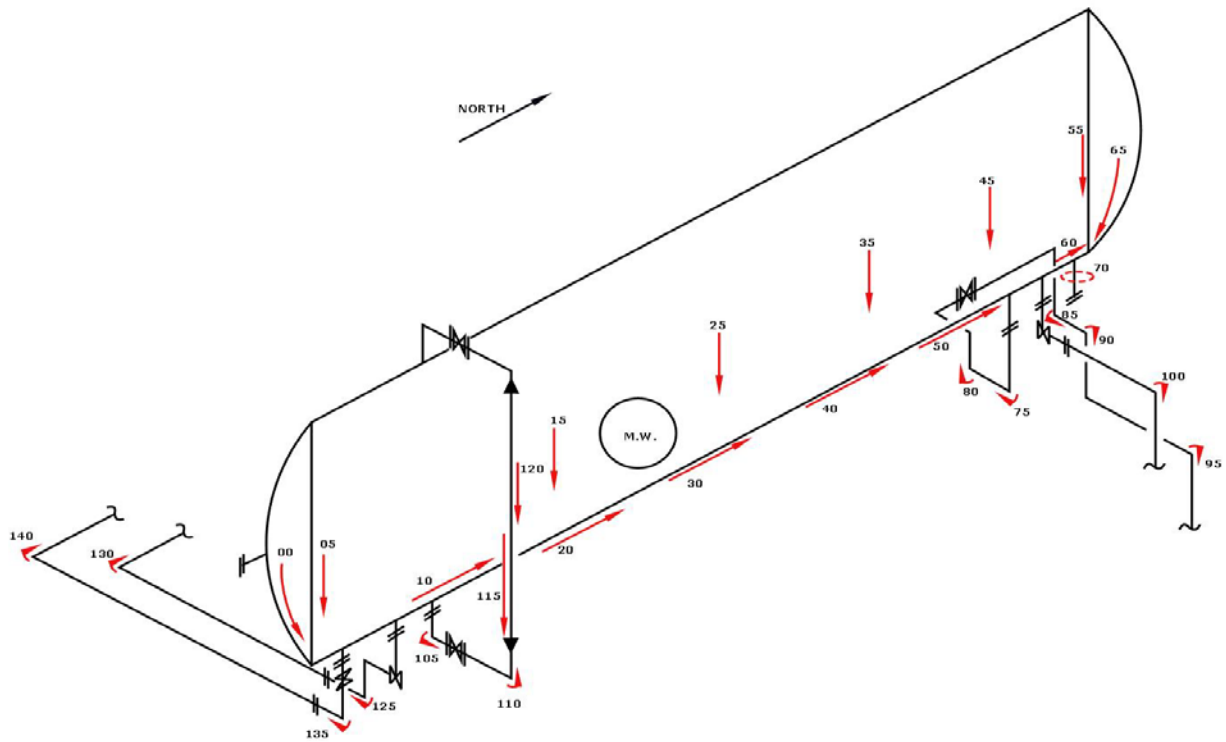
PSV Data Plate



|                        |                  |                   |                           |
|------------------------|------------------|-------------------|---------------------------|
| Location Name:         | DRUMHELLER       | LSD:              | 04-08-31-18 W4M           |
| Jur #:                 | A0227279         | Equipment/Tag No. |                           |
| Equipment Description: | BULLET           |                   |                           |
| Manufacturer:          | WESTERN ROCK BIT |                   |                           |
| Serial Number:         | 27935A           | CRN:              | C 4936.2134               |
| Shell MAWP:            | 250              | PSI               | Shell Design Temp: 151 °F |
| Tube MAWP:             |                  | PSI               | Tube Design Temp: °F      |
| Shell Material:        | SA-516-70        | Head Material:    | SA-516-70                 |
| Shell Thickness:       | 0.778            | in                | Head Thickness: 0.772 in  |
| Corrosion Allowance:   |                  | in                | Date Built: 1986          |
| Size:                  | 108              | in                | Pipe / Rolled Plate:      |
| RT:                    | 2                |                   | Client DWG #:             |

NOTES:







## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b>                     |

|                              |                  |                      |                            |
|------------------------------|------------------|----------------------|----------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70 |
| <b>00 HEAD</b>               | <b>2016</b>      | <b>CA</b>            | <b>T Min</b>               |
| <b>Shape:</b> Hemispherical  | <b>Min</b> 0.850 | <b>Flag</b> 0.772    | <b>STCR in/yr</b> 0.0000   |
| <b>OD:</b> 108               | <b>Avg</b> 0.857 | <b>Nominal</b> 0.772 | <b>LTCR in/yr</b> 0.0000   |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Remaining Life:</b>     |
|                              |                  |                      | <b>Retirement Date:</b>    |

|                              |                  |                      |                               |
|------------------------------|------------------|----------------------|-------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70    |
| <b>05 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b>                  |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.775 | <b>Flag</b> 0.778    | <b>STCR in/yr</b> 0.0000      |
| <b>OD:</b> 108               | <b>Avg</b> 0.780 | <b>Nominal</b> 0.778 | <b>LTCR in/yr</b> 0.0001      |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Remaining Life:</b> 81 Yrs |
|                              |                  |                      | <b>Retirement Date:</b> 2097  |

|                              |                  |                      |                            |
|------------------------------|------------------|----------------------|----------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70 |
| <b>10 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b>               |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.790 | <b>Flag</b> 0.778    | <b>STCR in/yr</b> 0.0000   |
| <b>OD:</b> 108               | <b>Avg</b> 0.793 | <b>Nominal</b> 0.778 | <b>LTCR in/yr</b> 0.0000   |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Remaining Life:</b>     |
|                              |                  |                      | <b>Retirement Date:</b>    |

|                              |                  |                      |                            |
|------------------------------|------------------|----------------------|----------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70 |
| <b>15 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b>               |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.778 | <b>Flag</b> 0.778    | <b>STCR in/yr</b> 0.0000   |
| <b>OD:</b> 108               | <b>Avg</b> 0.781 | <b>Nominal</b> 0.778 | <b>LTCR in/yr</b> 0.0000   |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Remaining Life:</b>     |
|                              |                  |                      | <b>Retirement Date:</b>    |



## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b> 0                   |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>20 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.783 | <b>Flag</b> 0.778    | 0.0000 0.0000                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.787 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b>                          |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>25 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.785 | <b>Flag</b> 0.778    | 0.0000 0.0000                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.786 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b>                          |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>30 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.786 | <b>Flag</b> 0.778    | 0.0000 0.0000                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.790 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b>                          |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>35 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.787 | <b>Flag</b> 0.778    | 0.0000 0.0000                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.789 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b>                          |





## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b> 0                   |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>40 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.792 | <b>Flag</b> 0.778    | 0.0000 0.0000                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.794 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b>                          |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>45 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.776 | <b>Flag</b> 0.778    | 0.0000 0.0001                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.776 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b> 136 Yrs                   |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b> 2152                     |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>50 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.774 | <b>Flag</b> 0.778    | 0.0000 0.0001                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.779 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b> 53 Yrs                    |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b> 2069                     |

|                              |                  |                      |                                                  |
|------------------------------|------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-516-70                       |
| <b>55 SHELL</b>              | <b>2016</b>      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Cylindrical    | <b>Min</b> 0.771 | <b>Flag</b> 0.778    | 0.0000 0.0002                                    |
| <b>OD:</b> 108               | <b>Avg</b> 0.777 | <b>Nominal</b> 0.778 | <b>Remaining Life:</b> 17 Yrs                    |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                      | <b>Retirement Date:</b> 2033                     |





## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b> 0                   |

|                              |                  |                     |                            |
|------------------------------|------------------|---------------------|----------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b> | <b>Material:</b> SA-516-70 |
| <b>60 SHELL</b>              | <b>2016</b>      | <b>Flag</b>         | <b>CA</b>                  |
| <b>Shape:</b> Cylindrical    | <b>Min</b>       | <b>Nominal</b>      | <b>T Min</b>               |
| <b>OD:</b> 108               | <b>Avg</b>       |                     |                            |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                     |                            |

0.778 0.000 0.778 0.767 0.0000 0.0002

Remaining Life: 36 Yrs

Retirement Date: 2052

|                              |                  |                     |                            |
|------------------------------|------------------|---------------------|----------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b> | <b>Material:</b> SA-516-70 |
| <b>65 HEAD</b>               | <b>2016</b>      | <b>Flag</b>         | <b>CA</b>                  |
| <b>Shape:</b> Hemispherical  | <b>Min</b>       | <b>Nominal</b>      | <b>T Min</b>               |
| <b>OD:</b> 108               | <b>Avg</b>       |                     |                            |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                     |                            |

0.772 0.000 0.772 0.0000 0.0000

Remaining Life:

Retirement Date:

|                              |                  |                     |                           |
|------------------------------|------------------|---------------------|---------------------------|
| <b>TML Description</b>       | Baseline         | <b>Flange ANSI:</b> | <b>Material:</b> SA-106-B |
| <b>70 NOZZLE</b>             | <b>2016</b>      | <b>Flag</b>         | <b>CA</b>                 |
| <b>Shape:</b> 360° Circ      | <b>Min</b>       | <b>Nominal</b>      | <b>T Min</b>              |
| <b>OD:</b> 2.375             | <b>Avg</b>       |                     |                           |
| <b>Spec:</b> ASME VIII Div.1 | <b>Comments:</b> |                     |                           |

0.135 0.019 0.154 0.0000 0.0000

Remaining Life:

Retirement Date:

|                         |                  |                         |                             |
|-------------------------|------------------|-------------------------|-----------------------------|
| <b>TML Description</b>  | Baseline         | <b>Flange ANSI:</b> 150 | <b>Material:</b> SA-234-WPB |
| <b>75 PIPING</b>        | <b>2016</b>      | <b>Flag</b>             | <b>CA</b>                   |
| <b>Shape:</b> 90° Elbow | <b>Min</b>       | <b>Nominal</b>          | <b>T Min</b>                |
| <b>OD:</b> 2.375        | <b>Avg</b>       |                         |                             |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> |                         |                             |

0.135 0.019 0.154 0.0000 0.0006

Remaining Life:

Retirement Date:

ASSUMED NOMINAL, EROSION NOTED



## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b> 0                   |

|                         |                                  |                             |                             |
|-------------------------|----------------------------------|-----------------------------|-----------------------------|
| <b>TML Description</b>  | Baseline                         | <b>Flange ANSI:</b> Unknown | <b>Material:</b> SA-234-WPB |
| <b>80</b> PIPING        | <b>2016</b>                      | <b>Flag</b> CA              | <b>Nominal</b> T Min        |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.151                 | 0.135                       | 0.019                       |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.155                 |                             |                             |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL |                             |                             |
|                         |                                  |                             | <b>STCR in/yr</b> 0.0000    |
|                         |                                  |                             | <b>LTCCR in/yr</b> 0.0001   |
|                         |                                  |                             | <b>Remaining Life:</b>      |
|                         |                                  |                             | <b>Retirement Date:</b>     |

|                         |                                                 |                             |                               |
|-------------------------|-------------------------------------------------|-----------------------------|-------------------------------|
| <b>TML Description</b>  | Baseline                                        | <b>Flange ANSI:</b> Unknown | <b>Material:</b> SA-234-WPB   |
| <b>85</b> PIPING        | <b>2016</b>                                     | <b>Flag</b> CA              | <b>Nominal</b> T Min          |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.120                                | 0.135                       | 0.019                         |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.144                                |                             |                               |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL, EROSION NOTED |                             |                               |
|                         |                                                 |                             | <b>STCR in/yr</b> 0.0000      |
|                         |                                                 |                             | <b>LTCCR in/yr</b> 0.0011     |
|                         |                                                 |                             | <b>Remaining Life:</b> 17 Yrs |
|                         |                                                 |                             | <b>Retirement Date:</b> 2033  |

|                         |                                                 |                             |                               |
|-------------------------|-------------------------------------------------|-----------------------------|-------------------------------|
| <b>TML Description</b>  | Baseline                                        | <b>Flange ANSI:</b> Unknown | <b>Material:</b> SA-234-WPB   |
| <b>90</b> PIPING        | <b>2016</b>                                     | <b>Flag</b> CA              | <b>Nominal</b> T Min          |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.133                                | 0.135                       | 0.019                         |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.151                                |                             |                               |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL, EROSION NOTED |                             |                               |
|                         |                                                 |                             | <b>STCR in/yr</b> 0.0000      |
|                         |                                                 |                             | <b>LTCCR in/yr</b> 0.0007     |
|                         |                                                 |                             | <b>Remaining Life:</b> 47 Yrs |
|                         |                                                 |                             | <b>Retirement Date:</b> 2063  |

|                         |                                                 |                             |                             |
|-------------------------|-------------------------------------------------|-----------------------------|-----------------------------|
| <b>TML Description</b>  | Baseline                                        | <b>Flange ANSI:</b> Unknown | <b>Material:</b> SA-234-WPB |
| <b>95</b> PIPING        | <b>2016</b>                                     | <b>Flag</b> CA              | <b>Nominal</b> T Min        |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.136                                | 0.135                       | 0.019                       |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.155                                |                             |                             |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL, EROSION NOTED |                             |                             |
|                         |                                                 |                             | <b>STCR in/yr</b> 0.0000    |
|                         |                                                 |                             | <b>LTCCR in/yr</b> 0.0006   |
|                         |                                                 |                             | <b>Remaining Life:</b>      |
|                         |                                                 |                             | <b>Retirement Date:</b>     |



## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                        |                 |                    |                 |                       |                         |
|------------------------|-----------------|--------------------|-----------------|-----------------------|-------------------------|
| <b>LSD:</b>            | 04-08-31-18 W4M | <b>Area:</b>       | DRUMHELLER      | <b>Location:</b>      | PLANT                   |
| <b>Jur #:</b>          | A0227279        | <b>Tag Number:</b> |                 | <b>Vessel Name:</b>   | BULLET                  |
| <b>CRN:</b>            | C 4936.2134     | <b>Year Built:</b> | 1986            | <b>Serial Number:</b> | 27935A                  |
| <b>RT:</b>             | 2               | <b>Vessel CA:</b>  | 0.000 in        | <b>Manufacturer:</b>  | WESTERN ROCK BIT        |
|                        |                 | <b>Shell MAWP:</b> | 250 PSI         | <b>Tube MAWP:</b>     |                         |
|                        |                 | <b>MAWTF:</b>      | 151 °F          | <b>MAWTF:</b>         |                         |
|                        |                 |                    |                 |                       | <b>Pipe/Plate</b>       |
|                        |                 |                    |                 |                       | 0                       |
| <hr/>                  |                 |                    |                 |                       |                         |
| <b>TML Description</b> |                 | Baseline           |                 | <b>Flange ANSI:</b>   | Unknown                 |
| <b>100</b>             | PIPING          | <b>2016</b>        | <b>Flag</b>     | <b>CA</b>             | <b>Nominal</b>          |
| <b>Shape:</b>          | 90° Elbow       | <b>Min</b>         | 0.135           | 0.019                 | 0.154                   |
| <b>OD:</b>             | 2.375           | <b>Avg</b>         | 0.167           |                       |                         |
| <b>Spec:</b>           | ASME B31.3      | <b>Comments:</b>   | ASSUMED NOMINAL |                       |                         |
|                        |                 |                    |                 | <b>T Min</b>          | <b>STCR in/yr</b>       |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>LTICR in/yr</b>      |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>Remaining Life:</b>  |
|                        |                 |                    |                 |                       | <b>Retirement Date:</b> |
| <hr/>                  |                 |                    |                 |                       |                         |
| <b>TML Description</b> |                 | Baseline           |                 | <b>Flange ANSI:</b>   | 150                     |
| <b>105</b>             | PIPING          | <b>2016</b>        | <b>Flag</b>     | <b>CA</b>             | <b>Nominal</b>          |
| <b>Shape:</b>          | 90° Elbow       | <b>Min</b>         | 0.135           | 0.019                 | 0.154                   |
| <b>OD:</b>             | 2.375           | <b>Avg</b>         | 0.156           |                       |                         |
| <b>Spec:</b>           | ASME B31.3      | <b>Comments:</b>   | ASSUMED NOMINAL |                       |                         |
|                        |                 |                    |                 | <b>T Min</b>          | <b>STCR in/yr</b>       |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>LTICR in/yr</b>      |
|                        |                 |                    |                 |                       | 0.0004                  |
|                        |                 |                    |                 |                       | <b>Remaining Life:</b>  |
|                        |                 |                    |                 |                       | <b>Retirement Date:</b> |
| <hr/>                  |                 |                    |                 |                       |                         |
| <b>TML Description</b> |                 | Baseline           |                 | <b>Flange ANSI:</b>   | 150                     |
| <b>110</b>             | PIPING          | <b>2016</b>        | <b>Flag</b>     | <b>CA</b>             | <b>Nominal</b>          |
| <b>Shape:</b>          | 90° Elbow       | <b>Min</b>         | 0.191           | 0.027                 | 0.218                   |
| <b>OD:</b>             | 2.375           | <b>Avg</b>         | 0.215           |                       |                         |
| <b>Spec:</b>           | ASME B31.3      | <b>Comments:</b>   |                 |                       |                         |
|                        |                 |                    |                 | <b>T Min</b>          | <b>STCR in/yr</b>       |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>LTICR in/yr</b>      |
|                        |                 |                    |                 |                       | 0.0006                  |
|                        |                 |                    |                 |                       | <b>Remaining Life:</b>  |
|                        |                 |                    |                 |                       | <b>Retirement Date:</b> |
| <hr/>                  |                 |                    |                 |                       |                         |
| <b>TML Description</b> |                 | Baseline           |                 | <b>Flange ANSI:</b>   |                         |
| <b>115</b>             | PIPING          | <b>2016</b>        | <b>Flag</b>     | <b>CA</b>             | <b>Nominal</b>          |
| <b>Shape:</b>          | Straight Pipe   | <b>Min</b>         | 0.207           | 0.030                 | 0.237                   |
| <b>OD:</b>             | 4.5             | <b>Avg</b>         | 0.351           |                       |                         |
| <b>Spec:</b>           | ASME B31.3      | <b>Comments:</b>   | SHELL OF BRIDLE |                       |                         |
|                        |                 |                    |                 | <b>T Min</b>          | <b>STCR in/yr</b>       |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>LTICR in/yr</b>      |
|                        |                 |                    |                 |                       | 0.0000                  |
|                        |                 |                    |                 |                       | <b>Remaining Life:</b>  |
|                        |                 |                    |                 |                       | <b>Retirement Date:</b> |



## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                             |                            |                                       |
|-----------------------------|----------------------------|---------------------------------------|
| <b>LSD:</b> 04-08-31-18 W4M | <b>Area:</b> DRUMHELLER    | <b>Location:</b> PLANT                |
| <b>Jur #:</b> A0227279      | <b>Tag Number:</b>         | <b>Vessel Name:</b> BULLET            |
| <b>CRN:</b> C 4936.2134     | <b>Year Built:</b> 1986    | <b>Serial Number:</b> 27935A          |
| <b>RT:</b> 2                | <b>Vessel CA:</b> 0.000 in | <b>Manufacturer:</b> WESTERN ROCK BIT |
|                             | <b>Shell MAWP:</b> 250 PSI | <b>Tube MAWP:</b> MAWTF: 151 °F       |
|                             |                            | <b>MAWTF:</b> °F                      |
|                             |                            | <b>Pipe/Plate</b> 0                   |

|                             |                                  |                      |                                                  |
|-----------------------------|----------------------------------|----------------------|--------------------------------------------------|
| <b>TML Description</b>      | Baseline                         | <b>Flange ANSI:</b>  | <b>Material:</b> SA-106-B                        |
| <b>120</b> PIPING           | <b>2016</b>                      | <b>CA</b>            | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> Straight Pipe | <b>Min</b> 0.333                 | <b>Flag</b> 0.207    | 0.0000 0.0000                                    |
| <b>OD:</b> 4.5              | <b>Avg</b> 0.346                 | <b>Nominal</b> 0.237 | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME B31.3     | <b>Comments:</b> SHELL OF BRIDLE |                      | <b>Retirement Date:</b>                          |

|                         |                                  |                         |                                                  |
|-------------------------|----------------------------------|-------------------------|--------------------------------------------------|
| <b>TML Description</b>  | Baseline                         | <b>Flange ANSI:</b> 150 | <b>Material:</b> SA-234-WPB                      |
| <b>125</b> PIPING       | <b>2016</b>                      | <b>CA</b>               | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.142                 | <b>Flag</b> 0.135       | 0.0000 0.0004                                    |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.149                 | <b>Nominal</b> 0.154    | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL |                         | <b>Retirement Date:</b>                          |

|                         |                                  |                         |                                                  |
|-------------------------|----------------------------------|-------------------------|--------------------------------------------------|
| <b>TML Description</b>  | Baseline                         | <b>Flange ANSI:</b> 150 | <b>Material:</b> SA-234-WPB                      |
| <b>130</b> PIPING       | <b>2016</b>                      | <b>CA</b>               | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.156                 | <b>Flag</b> 0.135       | 0.0000 0.0000                                    |
| <b>OD:</b> 2.375        | <b>Avg</b> 0.167                 | <b>Nominal</b> 0.154    | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL |                         | <b>Retirement Date:</b>                          |

|                         |                                  |                         |                                                  |
|-------------------------|----------------------------------|-------------------------|--------------------------------------------------|
| <b>TML Description</b>  | Baseline                         | <b>Flange ANSI:</b> 150 | <b>Material:</b> SA-234-WPB                      |
| <b>135</b> PIPING       | <b>2016</b>                      | <b>CA</b>               | <b>T Min</b> <b>STCR in/yr</b> <b>LTCR in/yr</b> |
| <b>Shape:</b> 90° Elbow | <b>Min</b> 0.231                 | <b>Flag</b> 0.189       | 0.0000 0.0000                                    |
| <b>OD:</b> 3.5          | <b>Avg</b> 0.235                 | <b>Nominal</b> 0.216    | <b>Remaining Life:</b>                           |
| <b>Spec:</b> ASME B31.3 | <b>Comments:</b> ASSUMED NOMINAL |                         | <b>Retirement Date:</b>                          |



## Ultrasonic Corrosion Survey

\*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 1, 2016

Inspector: D. Skeard

|                        |                 |                    |            |                       |                         |
|------------------------|-----------------|--------------------|------------|-----------------------|-------------------------|
| <b>LSD:</b>            | 04-08-31-18 W4M | <b>Area:</b>       | DRUMHELLER | <b>Location:</b>      | PLANT                   |
| <b>Jur #:</b>          | A0227279        | <b>Tag Number:</b> |            | <b>Vessel Name:</b>   | BULLET                  |
| <b>CRN:</b>            | C 4936.2134     | <b>Year Built:</b> | 1986       | <b>Serial Number:</b> | 27935A                  |
| <b>RT:</b>             | 2               | <b>Vessel CA:</b>  | 0.000 in   | <b>Manufacturer:</b>  | WESTERN ROCK BIT        |
|                        |                 | <b>Shell MAWP:</b> | 250 PSI    | <b>Tube MAWP:</b>     | PSI                     |
|                        |                 | <b>MAWTF:</b>      | 151 °F     | <b>MAWTF:</b>         | °F                      |
|                        |                 |                    |            |                       | <b>Pipe/Plate</b>       |
|                        |                 |                    |            |                       | 0                       |
| <b>TML Description</b> |                 | <b>Baseline</b>    |            | <b>Flange ANSI:</b>   | 150                     |
| <b>140</b>             | PIPING          | <b>2016</b>        |            | <b>Material:</b>      | SA-234-WPB              |
| <b>Shape:</b>          | 90° Elbow       | <b>Min</b>         | 0.208      | <b>Flag</b>           | CA                      |
| <b>OD:</b>             | 3.5             | <b>Avg</b>         | 0.215      | <b>Nominal</b>        | T Min                   |
| <b>Spec:</b>           | ASME B31.3      | <b>Comments:</b>   |            |                       | <b>STCR in/yr</b>       |
|                        |                 |                    |            |                       | <b>LTCR in/yr</b>       |
|                        |                 |                    |            |                       | <b>Remaining Life:</b>  |
|                        |                 |                    |            |                       | <b>Retirement Date:</b> |