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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | August 18, 2014 | First draft review comments (AV) |
| 3 | June 8, 2015 | Second Draft for Review (AV) |
| **4** | **September 16, 2015** | **Updated, Finalized Specification – Reference eDOCS #5823671-v3A (AV)** |
| 5 | May 25, 2017 | Updated references to standards ASTM A106/A106M-15, ASTM A139/A139M-16, ASTM A312/A312M-17, ASTM D1248-16, ASTM D4101-14e2 **(AAM)** |

NOTE:

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| Item | Description |
| Carrier Pipe | Carbon Steel: Schedule [     ] carbon steel, ASTM A53/A53M-12, Grade B ERW or seamless, except piping 40 mm and smaller, which shall be ASTM A106/A106M-15, Grade B. All joints shall be butt-welded for sizes 60 mm and greater, and socket-welded for 50 mm and below. Where possible, supply straight sections in 12 metres random lengths with 150 mm of piping exposed at each end for field joint fabrication |
| Stainless Steel: Schedule [     ], Type [304,] [316,] [316L,] [     ,] [ASTM A312/A312M-17.] [     .] Joints shall be butt welded for pipe diameter 60 mm and larger, and socket or butt welded for 50 mm and below. |
| Fibreglass Reinforced Plastic (FRP): Filament wound, using continuous glass filaments or centrifugally cast and [polyester] [vinylester] [epoxy] [     ] to form a structural wall over a resin rich corrosion resistant interior liner in accordance with ASTM D2310-06(2012). Liner shall have a resin-rich surface of [     ] mils. Joints shall be socket type. Supply straight lengths in 6 m to 10 m random lengths. |
| Polyvinyl Chloride (PVC): Schedule [40] [80] and shall be manufactured from a Class 12454-B PVC resin, in accordance with ASTM D1784-11. Joints shall be solvent-welded socket type. Supply straight sections in 6 metres random lengths. |
| Chlorinated Polyvinyl Chloride (CPVC): Schedule [40] [80], Class 23447-A, in accordance with ASTM D1784-11. Joints shall be solvent-welded socket type. Supply straight sections in 6 metres random lengths. |
| Polyethylene (PE): SDR [11] [32.5] [     ], in accordance with ASTM D1248-16 and ASTM D3350-14. Joints shall be plain end, joined by thermal butt fusion. Supply straight sections in 12 metres random lengths. |
| Polypropylene (PP): Wall thickness meeting a SDR pressure rating of 1,050 kPa. Joints shall be joined by [socket fusion] [butt fusion]. |
| Polyvinylidene Fluoride (PVDF): Pressure rated to 1,600 kPa at 20 degrees Celsius. Joints shall be plain end, joined by socket fusion. |

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| Containment Pipe | Carbon Steel: ASTM A139/A139M-16 Grade B or ASTM A53/A53M-12 Rev A, Grade B, ERW, with the following minimum wall thickness:  75mm to 125 mm diameter [Schedule 40] [     ]  150mm to 650 mm diameter [10-gauge] [     ]  700mm to 900 mm diameter [6-gauge] [     ]  95mm to 1050 mm diameter [4-gauge] [     ] |
|  | Stainless Steel: Schedule [     ], Type [304,] [316,] [316L,] [     ,] [ASTM A312/A312M-17] [ASTM A409/A409M-15] [    ], with the following minimum wall thickness:  75 mm to 250 mm diameter [Schedule 40] [    ]  250 mm to 400 mm diameter [10-gauge] [     ]  400 mm to 900 mm diameter [6-gauge] [     ]  950 mm to 1050 mm diameter [4-gauge] [     ] |
|  | Fibreglass Reinforced Plastic (FRP): Filament wound or centrifugally cast reinforced thermosetting resin. Resin system shall be [polyester] [vinylester] [epoxy] [     ]. Interior liner shall have a resin-rich surface of [     ] mils. Outer coating shall contain ultraviolet absorbers [and] [or] [be painted with a pigmented gel-coat] [color] [     ]. Manufacture in accordance with ASTM D2310-06(2012). |
|  | Polyvinyl Chloride (PVC): Schedule [40] [80], in accordance with ASTM D1784-11. |
|  | Chlorinated Polyvinyl Chloride (CPVC): Schedule [40] [80], in accordance with ASTM D1784-11. |
|  | Polyethylene (PE): Wall thickness to meet a pressure rating of [     ] kPa at [     ] degrees Celsius. Manufacture in accordance with ASTM D1248-16 and D3350-14. |
|  | Polypropylene (PP): ASTM D4101-14e2, Schedule [40] [80]. |
| Containment Pipe Joints | [     .] |
| Leak Detection System | [     .] |

**END OF SECTION**